IN THE DISTRICT COURT OF OKLAHOMA COUNTY
STATE OF OKLAHOMA

Jean Bookout; Charles Schwarz, individually and as Personal Representative of the Estate of Barbara Schwarz, deceased; Richard Forrester Brandt, as Personal Representative of the Estate of Barbara Schwarz, deceased,	)	
Plaintiffs,	)	
vs.	)	Case No. CJ-2008-7969
Toyota Motor Corporation; Toyota Motor Sales, U.S.A., Inc.; Toyota Motor Engineering and Manufacturing North America, Inc.; Aisan Industry Co., Ltd.,	)	
Defendants.	)	

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TRANSCRIPT OF MORNING TRIAL PROCEEDINGS

HAD ON THE 10TH DAY OF OCTOBER, 2013

BEFORE THE HONORABLE PATRICIA G. PARRISH,

DISTRICT JUDGE

Reported by: Karen Twyford, RPR

******* THIS TRANSCRIPT HAS NOT BEEN PROOFREAD *******

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(Whereupon, the following morning trial proceedings were had on the 10th day of October, 2013, to wit:)

THE COURT: Good morning. We're back on the record in Case No. CJ-2008-7969. Members of the jury are present as well as counsel and their clients. Mr. McCort, you can come back to the stand. Sir, you're still under oath.

And Mr. Jennings, you may continue your cross-examination.

MR. JENNINGS: Thank you, ma'am.

MICHAEL MCCORT,

called as a witness, after having been previously sworn, testified as follows:

CROSS-EXAMINATION

BY MR. JENNINGS:

Q Good morning, Mr. McCort.

A Good morning.

Q Let's start with the question of what caused the tire marks on the road, the service brake, which is ABS equipped or the parking brake, okay?

A Okay.

Q First, to be clear, there are actually two marks on the road, are there not, not just one mark?

A My understanding is at the very end as the car is leaving the road, there are two marks, just like I showed you in my simulation toward the end.

Q Do you remember providing a narrative disclosure of your work and your opinions in this case that could be submitted to the court and produced to the other side?

A I do.

Q You wrote that, didn't you?

A Yes.

Q Let me take a quick look at that with you, if we may. I'm interested in the part that I have highlighted right there where it says:

> "Mr. McCort is expected to offer opinions in the areas of accident reconstruction in this case. Mr. McCort is expected to testify that the single tire mark recorded in the Oklahoma Traffic Collision Report was caused by the locked right rear wheel."

That's really not accurate, is it, there are two marks recorded in the report?

A Sure. There is 125 feet of a single mark, and then right at that position there becomes double marks.

Q Right. Two marks, not a single mark?

A Agreed.

Q And to be clear, I think we established yesterday, that it is 150 feet, right, not 175?

A Yes.

Q Okay. And we really don't know, do we, Mr. McCort, that those marks, particularly the longer one, are perfectly straight, do we?

A Well, I think Trooper Duerson was pretty clear on that. I have them straight. Toyota's reconstruction expert has them straight. I think it is a pretty good bet they're straight.

Q Right. And I think you're probably right. But basically straight when it comes to accident reconstruction and when it comes to determining whether it was the ABS foot brake or the parking brake that caused it, really isn't the same as perfectly straight, is it?

A Well, I don't think there is any perfectly straight with any crash ever, but straight is straight.

Q Right. But the way these marks are recorded does not exclude the possibility of there being some steering in those marks, does it?

A I think it does exclude that. If there was some steering we would get a yaw and we would see that. And the officer was clear that he knows what a yaw mark is, and he didn't have a yaw mark.

Q Let me ask this: On the occasion, the two occasions that you went out to the crash scene to do your investigation --

A I just went once.

Q Somebody else from your office went the second time? Wasn't there a second time?

A No. There was no need to go more than once.

Q On that occasion, when you went to the crash site to do your investigation, what did Trooper Duerson and Trooper Cash say about whether that line was perfectly straight?

A Are you asking me if I interviewed the witnesses in the case? Because I did not. I did not talk to Trooper Duerson or Trooper Cash.

Q Oh, okay. So you didn't have an opportunity, at least you didn't take the opportunity, to talk to them and have them say right here, right here on the ground, is where the mark began, right?

A As I told you in my deposition, I don't talk to witnesses. I don't want to have the implication that I have elicited the response that I want by the question that I asked.

Q Sir, the question was: Did you do that?

A I did not do that. Of course not.

Q So the followup up to that is simply this: In fact, you avoid doing that, right?

A Yes.

Q Okay. Your opinion, as I understand it, is that the parking brake made that mark. And you have said, if I've accurately noted what you said yesterday and what you said in your deposition a few months ago that that mark is more consistent with the parking brake being caused by a parking brake that than being caused by a foot brake, right?

A Yes. And to be clear, I base that not just on the mark but on the whole analysis.

Q We will talk about that. But the whole analysis which includes, in part, what has been said by Mrs. Bookout, the driver, and what has been said by witnesses who heard things that Barbara Schwarz said after the crash, right?

A Yes. Absolutely. I looked at witness statements.

Q All right. We will have talk about that when we get to it. Now, you say it is the parking brake. That would be consistent with this overall scenario. We have two competing scenarios that we're looking at in this case. But with the overall scenario that we have an unintended acceleration and, basically, an out-of-control vehicle right?

A Well, we have throttle open for sure; that's the only way this works in physics.

Q Right. Well, what I'm saying is the making of that mark by the parking brake, which you said is the case, is consistent with the overall theme, the overall scenario, of an unintended acceleration and a vehicle out of control, right?

A I think it is consistent. Yes.

Q Okay. And a parking brake, I mean a service brake, a foot brake mark, is not consistent with that overall theory, right?

A Yes. As I said, if you -- first of all, you can't go around the curve at that rate. Even if you could, in the mid 50s, the car stops.

Q You told us that yesterday. You said you can't go around that curve at that rate. Did you try it?

A No. But I noted that Mr. Stopschinski was out there and he didn't try it.

Q Well, you bring up a good point. Mr. Stopschinski did a number of different kinds of tests, including, what, 20 or so driving runs through the crash site, right?

A Yes.

Q Did you do any of those?

A No.

Q Mr. Stopschinski also did some tests using the application of the parking brake to see what happens with the vehicle when you activate it is at various speeds. Did you do any of that kind of testing?

A Let me correct you. He didn't do it as various speeds, he did it at 45 miles an hour, which I find very interesting because --

Q Excuse me, sir.

THE COURT: Let him answer the question. Let him answer the question.

THE WITNESS: Well, I simply.

MR. JENNINGS: May I restate the question?

THE COURT: Let him answer the question on the table, sir.

THE WITNESS: It's my understanding that the position of Toyota was this vehicle was at 60 miles an hour but yet Mr. Walker ran the test at 45 miles an hour. So that doesn't quite square with what I understand what the opinions are, maybe they have changed. The test also applied the brake while steer was already input. As I told you in my deposition, it is my opinion that the vector was straight down the road when the parking brake was put on.

Q (By Mr. Jennings) Mr. McCort, my question was: Did you do that such a test? Your answer to that is what?

A No.

Q Doing a test like that, and doing just a simple braking test, just driving and applying the brake on a flat surface would be an easy test to run, wouldn't it?

A Sure.

Q Did you talk to the lawyers that had hired you in this case about whether such a test ought to be done so there would be some scientific evidence that would relate to what you're telling this jury?

A Are you suggesting what I've done is not scientific? The work that I've done --

Q Mr. McCort --

THE COURT: Let him answer his question.

MR. JENNINGS: Judge, he needs to be instructed --

THE COURT: Sir, I'm instructing you to let him answer his question.

MR. JENNINGS: I understand.

THE WITNESS: I simply wanted to say that I didn't feel it was necessary to do testing. It was a pretty straight forward case. There is a straight skid mark. I did the analysis. There is no reason to spend exorbitant amounts of money to go do testing.

Q The question I asked, Mr. McCort, is whether you talked to these lawyers that hired you about whether such a test could be run so you would have scientific data to bring to the courtroom to talk to the jury about.

A No. It is my job to figure out what I need to do to reach my conclusions, and I didn't feel like I needed to do that.

Q Well, since you didn't do any kind of testing, did you do any research of the literature out there, the scientific literature out there, which deals with tests that others have run, tests of the type that we're talking about in this case?

A I'm not sure what you're referring to. I showed you the VRTC testing that NHTSA did.

Q Fair enough. Let me clarify my question. You're a member the Society of Automotive Engineers, correct?

A Yes.

Q That's an organization composed of people who are like you, they are engineers and they work in the automotive field, right?

A Yes.

Q And they publish scholarly works of engineers who do research and run tests and then write about what they have learned and what they have done, right?

A They do. You always have to read those with an eye towards the bias of the author. But, yes.

Q Of course. The question that I'm asking you, since you didn't do any test, did you conduct any research of all the literature on the SAE Society of Automotive Engineers database so you could learn what others have done that might be informative in this case?

A Well, in research on what? The physics of making that turn, which isn't possible is Physics 101.

Q Let me clarify. We're talking about tire marks. We're talking about the kind of marks that service brakes can make and the kind of marks that parking brakes can make; that's what I'm asking you about. Did you do research of the scientific literature out there on that subject?

A Yes. If you asking me if I have looked at papers that talk about ABS braking, yes, I've looked at those papers.

Q Good. Let's talk about those. You have seen the one written by Terry Day relating to a simulation model for vehicle braking systems fitted with ABS, haven't you?

A Terry Day is the president and software developer of the software that I use. And, yes, his ABS model I'm familiar with and I have used it in this case.

Q Have you spoken to him about ABS brakes and about what kind of marks ABS brakes leave when they're applied in a crash scenario of the type we have here?

A No.

Q Have you read in papers written by Mr. Day that ABS equipped vehicles do leave -- can leave skid marks during straight-line braking? Have you seen that?

A I can't say that I specifically saw that. As I told you during my deposition, you can see some ABS marks.

Q Sure. So you're not telling the jury just because a vehicle is equipped with ABS brakes that it's not going to leave any marks on the road when it is traveling at 60 or 40 and the brakes are applied, are you?

A No. What I'm telling the jury is if we saw ABS marks they would be balanced among the car because the car is designed to do that, that you would see two marks and that you would see skip marks, at least at the initiation of tire marks you see ABS on and off, ABS on and off. Sometimes you don't see the at all.

Q I wanted today ask about that. You said that yesterday. You said that these tire marks would be balanced. Does that mean they would be equal on each side?

A Yes. That means the ABS system and the electronic brake force distribution system is trying to make sure that no single wheel locks up on its own. It is trying to balance everything.

Q In preparing to come to court today and talk to the jury about that, have you acquainted yourself with the Society of Automotive Engineers literature concerning testing on that particular subject, the balancing of these tires, the kind of marks that you are now describing? Have you looked at any particular paper?

A Nothing in particular. What I reviewed was a Toyota document which described how the EBFD works.

Q Let me show you one and ask you about this.

A Okay.

Q We know from the number of this paper -- each paper is assigned a number, right?

A Yes.

Q We know from the number of this paper that this was done in 1994, correct, because it says 940723?

A Yes.

Q All right. Have you seen this before?

A No. It looks like something a police officer wrote maybe.

Q Well, am I right in looking at this paper that it is a publication approved for publication or a paper approved for publication by the Society of Automotive Engineers?

A Yes.

Q Flip over to, if you would please, to page 159. Let me ask you about this page. I think that the part that I want to show you really is up out of the picture, but we have two figures here, figure 4 and figure 5. We will talk about those. Do you see figure 4, and you see those lines leading up to the rear of that car?

A I do.

Q Would you just surmise without even reading the paper that those are tire marks?

A Certainly they're tire marks. I don't want to surmise anything without reading the paper.

Q Would you say just from looking at them that they're fairly described as prominent?

A Sure.

Q Okay. And then if you look over on the right side of your paper -- of this paper, and you see, what, in terms of tire marks?

A Well, it is a little bit dark, but I think I can see tire marks there.

Q Do you see one, or do you see two?

A I see two.

Q Really? Do you see one that is more prominent than the other?

A Yes. Looks like on the left side. I mean, it would be nice if we had a better copy of this.

Q But you have never seen this?

A Yes.

Q Let's look at the language up at the top to see what the author reports. Can you read that highlighted paragraph up in the upper right?

A I'm going to try to read it here. I can't really see it all that well up there.

Q Read it out loud to us, would you?

A "Turning to the braking test described in the first part of this paper, it was observed there were too, t-o-o, I think he means T-W-O there, that tire marks were occasionally made. Figure 4 shows one such occasion with a BMW fitted with Bausch ABS 1," maybe.

Q Yes, sir.

A "There (sic) a faint but quite definitive mark can be seen leading to both rear wheels. The marks in the figure are continuous and show longitudinal lines corresponding to the grooves in the tire. They do not, however, show any dashes."

Q Well, isn't that what we have in this case, marks that are continuous and show longitudinal lines corresponding to the grooves in the tire?

A Well, once again, I keep telling you that what is important to me is there is one mark and not two marks. He said it was observed there were two tire marks.

Q Let's go on. Do you see the other part that is highlighted below that? Can you read that one sentence? Let me just read it for you. It says:

> "In other tests, we have occasionally noticed a mark from just one side of the vehicle."

And that's figure 5 below. Is that what that says?

A Yes. Was this vehicle equipped with electronic brake force distribution?

Q You can read it and take as much time as you want to talk about it. I understand this is something that you haven't seen before. But the part of this that I'm interested is is the part that I've shown you. Do you need a minute to look at that?

A Well, I'm interested in the actual vehicle in this crash, which is a 2005 Toyota Camry that has ABS and brake force distribution. So I'm not sure I can draw a direct comparison between the two, but I see where you're trying to go with it.

Q I'm sure you can. I guess the point is self-made that if you had done the research, and if you had considered the data, the scientific research on the SAE website you would have found this paper, right?

A I suppose I could have looked at this paper. Look, I reconstructed the accident, and I read all the witness testimony about a brake being pulled. I read Trooper Duerson thinking it was a right rear tire. I did simulations with service brakes and without service brakes. I did it with throttle. The totality of that evidence leads me to conclusions that I presented.

Q Sure. And you also testified that the mark, the long mark, not 175 feet but 150 feet, was very important to your work, right?

A Sure.

Q Based on what we've looked at in this paper, if you go down to figure 4, the kind of marks that we find in this picture and that Trooper Duerson apparently saw in the road out there at the crash site, do not necessarily mean that they were made by something other than the foot brake; is that right?

A The kind of marks do not -- there is two marks there. So, I'm sorry.

Q Let me restate the question. Those kinds of marks don't have to be made by a parking brake, do they?

A No. There is two marks there. I think they're made by service brakes.

Q Right. And those are the kinds of marks that are on the road out there on that off-ramp, aren't they?

A Trooper Duerson testified what he saw out there. Once again, he saw one mark, not two.

Q I'm asking you though, Mr. McCort, as the reconstructionist: Isn't it true, sir, those marks in that paper are the kind of marks that Mr. -- Trooper Duerson recorded as seeing those out there on the crash site?

A Well, respectfully, I think I've answered that. I don't think they are what he saw out there. There are two marks out there, Mr. Duerson said there was one.

Q Go to the picture on the right. Is that more like what Trooper Duerson saw, do you think?

A Again, I think I can see two marks in there, you think you can see one. The paper said they got marks with one tire marks, so that is what it is. I'm once again telling you the car we are talking about has brake force distribution and it has ABS.

Q Well, in this paper, according to figure 5, we've got predominantly one mark caused by an ABS service brake, right?

A I keep telling you I'm looking at that photo and I can see a mark on the left. If you look toward the right, I can see a mark on the right. I don't really mean to argue with you. I think the important thing is you're showing me 1994 or older technology and comparing it to our 2005 car that has electronic brake force distribution and ABS.

Q You're not arguing with me, Mr. McCort, you're arguing with the author. Because he says:

> "In other tests, we have occasionally noticed a mark from just one side of the vehicle."

Right?

A Yes.

Q Okay. Now, when it comes to identifying marks on a road, sometimes it can be kind of tough based on a number of factors like the lighting, right?

A Yes. The especially ABS it is becomes very difficult.

Q Time of day, if it is ate in the day near sunset, that can be a problem, can't it?

A Sure.

Q Okay. And the kind of marks that you get, whether you're talking about a foot brake or a parking brake, can vary based upon the kind of road service that you have, right?

A Yes.

Q Now, let's move on to a different subject. We talked about the question of what the effect of pulling the parking brake while you're driving down this exit ramp would be and the question of whether the vehicle would be expected to spinout or not. You're saying in this case, as I understand it, that the even though the parking brake was pulled the vehicle didn't do the normal, usual thing, it didn't spinout?

A Yeah. As I told you in my deposition, that vehicle had to be lined up straight down the marks. And that is the case whether it is service brakes or a parking brake. If you have got a straight mark, you're lined up straight down those marks.

Q Right.

A Then you have one tire that is locked up and another one that is nearly locked up. So when you talk about locking two rear brakes, as we discussed in my deposition, that is different than locking one rear brake.

Q If you have rear tires that are totally locked up, you wouldn't just get one or two clicks in -- you couldn't produce that with a parking brake that just had one or two clicks when you pulled the handle up, could you?

A I don't know how many clicks it would take. I think the defense expects have testified the same thing.

Q One or two clicks is a long way from a full engagement of the parking brake, isn't it?

A Sure.

Q And you're saying you think there was full engagement of the parking brake, right?

A No. I'm saying there is engagement sufficient to lock one of the tires. The fact that we didn't lock both I think is evidence that there wasn't full engagement of the parking brake.

Q Well, one of them got locked fully, didn't it, in your view?

A Yes. Absolutely.

Q Let's look at the disclosure that you made again. Do you see the part that I highlighted in orange? That is what I want to talk to you about. We're on the subject of whether this vehicle would have spun out when the parking brake was engaged. You say here -- tell me if I read this correctly:

> "Locked rear wheels on passenger vehicle create instability in vehicle handling, usually leading to spinout."

Right?

A Yes. That's what we just talked about.

Q And if I go a little farther, it says:

> "The unstable vehicle handling condition created with locked or nearly locked rear wheels without the benefit of ABS would make it difficult to complete the turn to access Texana Road."

Those are your words, right?

A Yes.

Q So if you engaged the parking brake in the way that you say it was engaged here, if I go back to your words here:

"The usual result is that it would spinout."

Right?

A Yes.

Q And so what we had in this case in your view of this crash is something unusual, not the usual expected result, but something different?

A I just told you that only one of the tire marks locked, not both. And the point of that statement is just what I've been talking about all along. If we had ABS and if this was ABS braking, you can steer with ABS, you can go around that curve. This is a straight line.

Q Mr. McCort, does the fact that Trooper Duerson only saw and only recorded one long line and one short line indicate -- does that mean that the parking brakes in your view of the crash with not engaged? Is that what that means?

A No. I think the parking brake was engaged.

Q I know. Does that mean -- let me see how to say this -- the fact that we've got just one long mark and one short mark, does not mean that the parking brake did not engage both rear tires, does it? You can have a mark like that and still have engaged and have fully locked both rear tires, right?

A No. As I told the jury yesterday certainly we've engaged both rear tires. We've locked one of them, and we have nearly locked the other one. As I said in my stimulation, I stimulated it with 80 or 90 percent lock. As we slow down and we have less energy, then that other one that is really close to being locked but isn't quite locked does, in fact, lock up, and there are the two tire marks that you started this examination talking about.

Q So you think that since there is one long mark and one short, both sides, both rear wheels couldn't have been fully locked? Is that your view?

A My view is that the right side was fully lock, and left side toward the end locked up. Again, I'm not just basing that just on the tire marks. I'm basking that on all of the evidence in this case.

Q We're still on the question, Mr. McCort, of why didn't this vehicle spinout given the speed it is traveling and the fact that the rear tires are locked in the way that you just described. Let me ask if I got this right yesterday. I made a note that you said when a car is going straight there are no lateral forces, sideways forces working on it. Did you say that?

A Probably.

Q Is it true?

A Yes.

Q Well, on that ramp you've got a crown to the road, don't you?

A Yes.

Q It's kind of high in the middle?

A No. Not kind of high but there is a little bit of a crown.

Q There is a crown?

A Sure.

Q Okay. There are variations in the road. You said earlier, dips, bumps, potholes, roughness that led to a resurfacing, right?

A Well, I conceded that there could be any number of things that lead to a resurfacing.

Q Likely all of those conditions exist on this ramp, right?

A No. There is no way that anyone can say what the conditions were. To say likely that it had potholes and that it had cracks and whatever we can't say that. Nobody knows exactly what was there. We do know that Trooper Duerson didn't got out there and say, Hey, look, this road was piece of crap, so I can't tell you for sure what these tire mark were?

Q You do know it is not perfectly flat, though, don't you?

A Yes. I just told you that.

Q And you know that it has a downgrade, right?

A Yes. The upper portions of the ramp have a downgrade. I can't remember maybe, three or four percent. Then down where we're at is on the order of .7 percent, 1 percent.

Q Actually, at the top of the ramp, it goes up a little bit, right?

A Yes.

Q And so there is an increase. Then you go over a little hill, and then you go down. In fact, all in all there is a, what, 20 foot decrease in elevation from the starting point up there at the gore point, about that?

A You asked me that at the deposition. And I was guessing that based on the height of the bridge. As you point out, it started lower, went up, then came back down. If you really look at the start to the end it's about ten feet. But it just depends on where you measure.

Q Okay. A ten-foot decline in elevation. In addition to that, you have wind, and you have steering that is taking place. Those things are introducing lateral forces. I should demonstrate, I guess. Maybe I did, maybe I didn't. But lateral forces meaning side forces on this car while it is driving down the ramp, right?

A Yes. I'm not sure what point in the ramp, and I can't imagine that wind is going to make this thing spinout.

Q I'm not suggesting that it necessarily would, unless you engage the parking brake. On any road, when you're driving down the road, there are lateral forces that are at work on the vehicle all the time, aren't there?

A I think maybe what you're referring to are just the stability, the cornering stiffness of the tires. As you're driving down the road, that's what keeps you from spinning out is you have some stability issues. The point of my testimony yesterday was in that steering maneuver where you have a .2, .3, .4 G lateral turn, that is a big lateral movement. And you just can't do that at 60 miles an hour. So that is the point I was trying to convey.

Q Let's focus. I'm talking about just driving down the road. When people drive they do this?

A Yes.

Q Why is that?

A Well, as I just said, there are forces that are acting on the tires that are keeping you from sliding out.

Q Right. Lateral forces, right?

A Yes.

Q Okay. You certainly wouldn't want to get at the top of that ramp and take off down to the bottom and take your hands off the steering wheel and just let it go because there aren't going to be any lateral force, it will just go where you point it, right?

A Of course not.

Q There are light things that are taking place along the way that are called perturbations, right?

A Yes.

Q Now, you're the engineer, I'm not, it is easy for me to make a mistake. But perturbation is a word that engineers use in circumstances like this, right?

A Well, I'm not sure what you're referring to, but let's talk about it.

Q Sure. Changes in the surface of the road, the island, driving across the corner of the island with a curb of some type, couple of inches maybe; that's a perturbation in the movement of the vehicle down the road, right?

A Well, I don't think the vehicle has evidence of hitting a curb. The vehicle will do certain things when you hit a curb, and we don't have that evidence.

Q Well, we're talking in general terms right now. I'm just talking about what a perturbation is. I looked it up in the dictionary so I would get it right. Let me put it here and see if you agree with this. I highlighted it. It says:

> "To perturb, which is the verb, means to disturb greatly, make uneasy or anxious, upset. To throw into

great confusion."

That is a fair definition of --

MR. ESDALE: Your Honor, I would ask that he be at least shown the other definitions. Some apparently relate to physics as opposed to emotional states.

THE COURT: He is showing it to him.

THE WITNESS: Okay.

Q (By Mr. Jennings) I'm just trying to agree on the definition of the word perturbation. Is what I read the first definition in that book?

A Well, I think the first definition is more along the lines of emotional state. But I think what you said earlier is fair, small variations in something would be a perturbation.

Q Certainly driving across the corner of the island would be a perturbation, wouldn't it?

A Again, you're suggesting that there is some big curb strike there, and I don't think that's the case.

Q I'm not suggesting anything, I'm just asking: Wouldn't that be a perturbation?

A Driving down the road anywhere is going to create perturbations. I completely agree with that.

Q Good. By the way, when you did your computer simulations that you told us about, when you had to model the environment, the E of HVE environment, did you model the island?

A The island is in there. To the point of your question, I don't know that there is a raised section of the island.

Q The island is drawn there in 2-D way.

A That's not correct. There is a surface there. It is not drawn in a 2-D way, there is a three-dimensional surface there.

Q Is it not modeled as an elevation or as a perturbation, is it?

A No. It is modeled as we surveyed it at the time that we were there. That's all I could do.

Q Let me go on with that just a little bit. I'm still interested in this usual response. Do you remember when you gave your deposition and you -- we were going through your file, and we found this, an excerpt from a book entitled *Brake Design and Safety* by Rudolph Limpert?

A I do.

Q I didn't ask you to bring this, you brought this on your own, right?

A Yes. There was some suggestion that lockup of the rear brakes wouldn't cause a loss of control. I'm not sure where that came from, but it seems like we're saying the same thing that you lock up the rear brakes you will have a loss of control at some point.

Q Exactly. In fact, you're going to have it right away, aren't you?

A No. Two things there. First of all, in this we didn't lock both rear brakes, we locked one of them. As I told you in the deposition, the car is being pulled along by throttle, so that is going to delay that response. In the end we're talking about three seconds, 2 1/2 seconds from the started of that mark to 27-mile-an-hour impact to the hill.

Q We will talk about this more in a minute, but your view is that despite the fact that we have these lateral forces that are involved as this vehicle is going down the road that if you've got the throttle open you can just pull it along and overcome that; is that right?

A As I told you in my deposition, and you know this darn well, I said that it is going to delay it, but you're absolutely going to lose control at some point.

Q It is going to delay it, you said, but you will absolutely lose control, you did say that, and I agree with that. Let's look at what Mr. Limpert said in his book that you brought to your deposition. Do you have this handy? Would you like me to -- I will give you my copy.

A Okay.

Q I may have a note or two on those. Don't read those, just read the book. Can you read that excerpt, and I will use the actual book over here. You did the highlighting in that excerpt right there, didn't you?

A Probably. I don't remember specifically, but probably.

Q Somebody at your firm did. When you brought it to your deposition, it already had the important parts highlighted, right?

A Yes. Again, there was a suggestion that this phenomena doesn't happen, and I was very surprised that someone would say that. So I wanted to make sure that I explained that.

Q Right. Because losing control and spinning out, as you say, is the usual result, right?

A Of locking both rear wheels.

Q I understand. Let's look at the book. Let's see if we can follow along here. I've highlighted I think basically what you've highlighted, maybe a little bit more. But the part that is of interest to me is what I've highlighted at the top. Tell me if you agree with this.

> "A response is unstable, that is a vehicle's response is unstable, when a relatively small disturbance force causes greater and greater deviations from the initially stable motion."

You agree with that, don't you?

A Yes. I have ten times now.

Q "In the unstable case, the emergency required for the unstable motion to develop is provided by the kinetic or motion energy of the system, the speed of vehicle."

Right?

A Yes.

Q That's what that explains. You said yesterday that we were having to live by the laws of physics. Those are laws that we can't break, we're all governed by those. And this is actually just a statement of laws of physics, right?

A Yes.

Q Okay. It goes on:

"Accident and vehicle test data, as well as basic engineering analysis, indicate that locking of the rear brakes before the front will result in violent vehicle instability most frequently causing the vehicle to spin about its vertical axis."

You've said that, we're together on this, right?

A We're together on this.

Q Good. Good. Let's go on. Go down a little farther. Tell me if you agree with this:

"The development of vehicle instability due to wheel lockup is illustrated in figure 7-13. If it is assumed that the foot wheels have not yet approached sliding conditions and are all still rolling and that the rear brakes are already locked, any disturbance in the lateral direction due to road grade, side wind or left to right brake imbalance produces a side force, F something, I don't know what that means, acting at the center of gravity of the vehicle. The resultant force stemming inertia force induced by braking and the lateral force is now acting under the vehicle slip angle."

You agree with that, don't you?

A Yes. We've said it over and over again. I'm the one that brought you this paper. I don't know what else to say.

Q Slip angle is when the vehicle begins to do this, and it creates an angle from the longitudinal direction of the vehicle, right?

A Slip angle is the difference between the heading of the vehicle and the direction the vehicle is actually traveling.

Q Let's see what I highlighted in red, see if we agree in this:

"The lateral side force must be counteracted by side forces produced at the tires. Since the rear wheels are sliding, no tire-side forces can be produced at the rear end."

A Ah-ha, you finally got to the point, which is that the left rear wheel is still rotating, and so it can produce a side force, and it can maintain stability.

Q And you're saying that based upon the fact that the mark on the right side is longer, at least can be seen better, than one on the left; is that right?

A Yes. The mark on the right side goes all the way right up to the edge of the road. Then right as you're going off the road, the mark on the left side happens. Then this all takes place in a matter of three seconds. And we also have the throttle as this car is trying to spinout like that, the throttle is trying to pull it forward. There is a lot at play here, but I don't disagree if you have a full lockup of both tires you will probably have some spinning issues.

Q You brought up the time element again. Let's look at that. It is over on page 281 do you have that in your excerpt, or do I just have it?

A I have it.

Q Okay. The part that I I'm interesting in says this:

> "The associated yaw or spin angle would be approximately seven degrees, one second after the instability began."

Do you see that?

A Yes.

Q That's not down the line, that's right now, isn't it?

A Yes. One second is one second.

Q "For vehicles exhibiting rear brake lockup before front, relatively small vehicle slip angles of two to five degrees" -- two degrees, I mean, just two -- "generally are sufficient to generate angular accelerations in excess of the limit recoverable by the driver. If the disturbance slip angle is greater, the unstable angular acceleration and associated spin angle will increase rapidly."

Right?

A Yes.

Q Do you agree with that?

A Sure.

Q Different subject. Mr. McCort, I just want to ask you a little bit about some things that you've talked about briefly in your direct examination. That's just your background, who you are and what your qualifications are, okay?

A Okay.

Q What I know about your background comes from what you said in your testimony and also from the CV. We used that abbreviation carelessly, possibly, your curriculum vitae, your resume --

A My resume.

Q -- which you gave to us at the time of your deposition. So that's what I'm working off of at this point. You're a civil engineer as I understand it, right?

A Yes.

Q Generally speaking, civil engineers deal with roads, bridges, buildings, that kind of thing?

A Yes. As I told you in my deposition, we do that. But we also do stress analysis, which was my focus was structural analysis, structural dynamics.

Q And you have been in the testifying business, as you are now in, as you now said 16 ears; is that right?

A I've been in the consulting engineering business for 16 years and I testify as part of that. I'm not in the testifying business.

Q Well, your work is accident reconstruction which relates to matters that are in litigation or may become in litigation, right?

A Yes.

Q All right. And in the course of that work, you've given depositions like this one that you gave me over 200 times, haven't you?

A Probably. Yes.

Q And you've appeared in many trials, haven't you, sir, like this one?

A Yes. Not so many trials. But, yes, probably ten or 12, something like that.

Q Your firm is called Ponderosa Associates, and you're up in Colorado outside of Denver, right?

A Yes.

Q And you're an owner of that business, you're one of the owners of that business, right?

A Well, I'm a small shareholder. But, yes.

Q And the primary business of Ponderosa Associates is working for lawyers in matters of this type or similar matters, right?

A Yes. Again, as I told you in the depo, we do some other consulting work, but most of it is forensic.

Q In fact, I think you said when you gave your deposition that 70 to 80 percent of the work that you do is product liability cases like this, right?

A Well, I don't know if I said product liability, but certainly litigation. I said what I said. I don't have any reason to argue with you.

Q I know it's been a while, but I'm kind of interested in being accurate about it. So if you said that 70 to 80 percent of your work is product liability cases, I think that's what you said.

A What page are you on, please, sir?

Q Sir?

A What page are you on?

Q You know, I thought it was on page 130, but I'm not sure I've got it right to be honest.

A It probably would have been early on on the depo.

Q It's probably not worth taking the time over. Let's take the time, others are grimacing, so let's take the time. Let me find it here. There it is on page 13. That's what -- that's how stumbled I was, 13 not 130. Mistakes are made.

You said there, I asked you the question, how much -- this is page 13, line 15:

> "How much of the work that you do in these kinds of cases is done for lawyers who are representing plaintiffs in lawsuits against manufacturers of some kind?
>
> "Answer: It's a question I always struggle with. I can't give you a precise percentage, but it is very high, you know, on the order of 80 or 09 percent plaintiff work."

A Okay.

Q It was true when you said it, is it true now?

A Absolutely. Yes.

Q All right. You've got, what, ten testifying engineers in your firm?

A Let's see here. That's probably about right.

Q And you and your colleagues do this kind of work all over the country, don't you?

A We do.

Q And, in fact, you told me at the time of your deposition that you opened probably 1,000 new cases of this type every year, right?

A Well, I don't personally open them, but our firm does. And the 80 to 90 percent more applies to me. Our firm has folks that do almost all defense work. It just happens that I have a lot of plaintiff contacts.

Q And you charge $250 an hour. How much would you say that you have charged the lawyers for the work that you have done in this case?

A You know, I give you my billing. I think it was 47,000 or something at the time of the depo.

Q That was up to the time of the deposition, it has gone up I take it since then over the 47,000?

A Sure.

Q Okay. And you've had cases in your career against all of the major automobile manufacturers, haven't you?

A I worked for attorneys who have cases against the manufacturers. I just do accident reconstruction. That's what I do.

Q Sure. And if I went to the board and wrote down a long list of the all the companies that have been defendants in the cases that you worked on, we would have a list of all the major manufacturers in this country, wouldn't we, car companies?

A Yes. As I told you in my deposition, the major manufacturers. I haven't done a case with, you know, Rolls

Royce or Ferrari, but Ford, Chevy, those. Yes.

Q Let me ask this: Mr. McCort, in a year's time how much money would you say that Ponderosa Associates charges lawyers or brings in from lawyers who are suing manufacturers in cases like this?

A I have no idea.

Q Well, you told me that you were an owner of the firm. Can you tell -- can you give me an estimate of the amount of money that comes in from that kind of work in an annual basis?

A I can tell you that we have a total amount of money that comes in. I don't know how much of that is related to fees and are travel expenses and all of that. But I think it is on the order of 700,000, something like that.

Q $700,000 a year you're saying comes into your firm that employs ten engineers?

A No. We employ 18 people. But sur, yes.

Q 750. So you generated nearly 10 percent of that in this one case, haven't you?

A I'm not sure that works out.

Q Well, you're $50,000 or so, and you're approaching 10 percent of the firm's income; is that right?

A Okay. Whatever it is, the math is the math.

Q I'm just asking you whether as an owner of the company you can you give us a reasonable estimate.

A That's all I can do is give you an estimate, and that is the estimate.

Q Now, when you were hired in this case, you assigned this case a file number, didn't you?

A Yes.

Q It is 8419; is that right?

A Yes.

Q And the O-8 -- I should say 08419, "08" means 2008, right?

A Yes.

Q And the "4" means April, that's when you were with hired?

A Yes.

Q And the "19" means that this was the 19th case in the month of April that came into the firm, right?

A Yes.

Q Have you ever been hired by an automobile manufacturer to do engineering work?

A Again, as I told you in my deposition, I was hired by Neoplan Bus Manufacturing to do stress analysis on their buses for issues they had with the buses of breaking and failing in Pittsburg.

Q One?

A Yes.

Q Let me ask you, Mr. McCort, about something on your resume. Do you remember when we had a conversation at your deposition about this, the fact that you have a section on your resume entitled "publication"? Do you see that?

A Yes.

Q Is it still on your resume? Do you still use this?

A Yes.

Q "Publications." This means typically publications that you've written, right?

A I told you I didn't write this, that my name was added to the report.

Q Mr. McCort, I know what you told me, but these people don't; that's why I'm asking you now?

A Well, I didn't stand up here and point to this article and say that I know what I'm doing because someone put my name on their article about amusement rides.

Q Let me ask you this: This is the section of your resume called publications, did you write that paper?

A Didn't I just answer that? No I did not write that paper.

Q Was it published anywhere?

A We went through this in my deposition. I don't know. I've never seen the paper. I did testing on a case. I instrumented an amusement ride in California, and I provided data from that instrumentation. The gentleman who authored that paper said, Hey, can I use your data? I would like to use it, I'm going to put your name on the paper; that's as much as I know about that paper.

Q So you really don't know if it is a publication at all?

A I told you that. I have no reason to believe that it's not, but it's not something I'm ever pointing to in terms of my qualifications. But if I left that out, you would be jumping on me that I'm not putting everything I did down there.

Q Mr. McCort, to be fair, you say you don't have a point to it. This is the resume that you produced for the court in this case, right?

A Yes.

Q Okay. Let me ask a couple of things about your reconstruction, Mr. McCort. You did this drawing to describe what you thought. And just a couple of quick items: Way up here off the top of this, up at the top of the ramp, according to your reconstruction, Mrs. Bookout is going 65 miles per hour or so, right?

A Yes. I don't think I can really call it my reconstruction. We agreed that she is probably going to be going the speed limit. But my reconstruction starts at the end of that 150-foot mark which, by the way, is dimensioned correctly there, and we talked a lot about that. And the 175 is not on there.

Q I understand. Since you brought it up, let me ask you this: Did you go back and check your deposition for the other places which you explained not just the two that are on your errata sheet but the other places in your deposition where you explained to me that it was 175 feet not 150 feet? Did you go back and check those others?

A I found two, and that's what I put on my errata sheet. Now, I did read it last night, and I found about ten where I said 150.

Q Let's look at one just to see. Page 64. I don't believe that is on your errata sheet. This is the one that -- and I have it marked in red:

"To the start of the 150-foot mark."

I said. And you said:

"Yea. And it's really 175 if you include the 25 off the road."

A Give me a second to get to that. Okay.

Q And then if we go to -- now, that needs to be corrected too, doesn't it, not just the first two but that one as well?

A I thought we corrected that. If you go two pages later, we talk about 150 feet.

Q Now, just to finish the couple of things I was going to talk to you about on your reconstruction, we know that up at the top of this drawing off the scale up here somewhere the vehicle is going about 65 miles per hour. I know that's not where your reconstruction starts, but that is a fair assumption, isn't it?

A Yes. Highway speed. Nobody can tell us for sure what that was.

Q Then your reconstruction starts right here at the beginning of the mark, and you say that the speed there is about 40 miles per hour, right?

A Or less. Yes.

Q Forty miles per hour or less. So during this distance up here, up there, where the unintended acceleration is occurring, her speed has decreased from 65 to 40 or less, right?

A Again, we can't say precisely what happened there. And we talked about this yesterday. Could have decreased to 30 and then increased back up to 40. I don't know how the car got between the top and the bottom, but I do know that if service brakes were applied right there the car would have stopped at 40 miles an hour. It doesn't stop at 62 miles an hour.

Q What if you make an assumption that the brake simply was not used? Would that explain that scenario?

A If you're talking about a 40 mile an hour speed, which is the only speed you can get with that curve, if you didn't apply the brakes until you started right there at 40 miles an hour you can stop well short of that distance. So that alone tells me it is not the service brakes.

Q A quick sidenote about the throttle here, Mr. McCort. If, at the beginning of this -- at the beginning of this ramp, if Mrs. Bookout put her foot on the brake to slow down to make the turn, and as some experts in this case will probably say, that made that throttle stick, it would have stuck in the closed position, wouldn't it?

A Well, I'm not going to opine on, you know, the throttle issues. Other folks are going to do that. But I will tell you, from a reconstruction standpoint, the only way that this crash works is with the throttle open.

Q The question is simply this: If you put your foot on the brake, slow the vehicle, that closes the throttle, right?

A Apparently not. But I don't know. That is not my role in this case.

Q Just a very small quick hypothetical: If you put your foot on the brake and the vehicle slows, the -- and the throttle sticks, the throttle sticks in the closed position, right, sir?

A Yeah. I don't know how to answer that other than I have. That's not my area. I don't know, you know, you're talking about brake override where it is supposed to do that when you hit the brake. What I'm telling you is that at this point in crash, where we have physical evidence and where I can do all of my analysis that there has to be throttle.

Q You referred yesterday, in describing the work that you did leading to your conclusions, that one of the things you did was consider what Barbara Schwarz said, what people quoted Barbara Schwarz as saying. Do you remember that?

A Yes.

Q And I discovered when I took your deposition in Colorado back in August that the lawyers who hired you sent you medical records relating to Barbara Schwarz?

A That was in my file. Yes.

Q Right. It was an exhibit to your deposition. We made it that the day, right?

A Okay. Sure. You have my entire file.

Q Did they send you any medical information about the driver, Jean Bookout?

A No. I wanted the weights of the two drivers. Ms. Bookout testified in her deposition what the weight was. Obviously Ms. Schwarz can't testify anymore, so we used her medical records.

Q Well, let me show you what has been marked as Defendant's Exhibit No. 70.2. And I will represent to you, sir, this is one of the medical records that you had in your file provided to you by the lawyers. I got it the day of your deposition. Does that look familiar?

A Yes. Are you saying that you didn't have these before my deposition? I thought these were --

THE COURT: Counsel approach before you question him about this.

(The following bench conference was had outside the hearing of the jury:)

MR. ESDALE: He is going to be asking about medical conditions? This is outside the scope.

MR. JENNINGS: It's not at all outside the scope. He said that he relied in part on quotations people made of things that Barbara Schwarz said. He said it yesterday, and he just now said it again. This is a document --

THE COURT: Number one, everybody be quiet because I don't want the jury hearing this; that is why we're up here around the table.

MR. JENNINGS: I want to ask him if he read this part of it and if that entered into his thinking.

THE COURT: Don't say what it is. Ask him to look at the highlighted portion. If he did consider it, then it come in.

MR. JENNINGS: Well, even if he didn't consider it, Judge, he should have considered it, and I will ask him that.

MR. ESDALE: Judge, that is hearsay.

THE COURT: What does this have to do with his accident analysis?

MR. JENNINGS: Because he just testified, he has testified twice now that part of his work that he did was considering what witnesses said, including what witnesses said --

THE COURT: No. You can ask it the way.

MR. JENNINGS: Let me make an offer of proof then.

THE COURT: Not in front of the jury. We will do it at the break. You can ask it the way that I just said that you could ask it.

(Within hearing of the jury:)

Q (By Mr. Jennings) Did you read that medical records?

A Just now. Yes.

Q Well, back in doing the work that you did in this case, did you read this medical record relating to Barbara Schwarz?

A Again, as I told you in my deposition, I don't really care about the medical records. What I use them for is weights of the occupants. So I doubt that I read this page. But I just read it now.

MR. JENNINGS: Judge, I want to be really careful. I don't want to get in trouble.

THE COURT: I think you just need to move on. He said he didn't consider it.

MR. JENNINGS: That's what I will do.

Q (By Mr. Jennings) Final subject, Mr. McCort, the simulations. As I understand it, you've got this program, HVE, Human Vehicle Environment. And in order to get output from that computer program, you have to have input, right?

A Yes. Just like every other simulation program.

Q Sure. And the output is as good as the input is, if the input is not valid then the output is not valid, right?

A I think the old expression is "garbage in, garbage out." Yes.

Q True here as it is anytime you're dealing with a computer program, right?

A Yes.

Q Okay. And you said that -- you said -- and I think I wrote this down right:

"Give it initial conditions and let it fly."

You said that yesterday, right?

A Yes. Probably. Yes. That's what you do. You assign initial conditions, and you let the computer do the math and the physics, and you iterate that until you get a match to the physical evidence.

Q And as you said, you have hours of sitting at your computer iterating, changing things, until you finish the process and get the output, right?

A Yes.

Q And you have to define the human, you have to define the vehicle, and you have to define the environment to do that. And you said, in fact, as I recall, you ran a lot of scenarios, right?

A Yes.

Q Okay. And also in doing this, you say, as I recall what you said in your deposition, you have to make sure the vehicle model follows the mark?

A Of course I'm not going to run a simulation that doesn't have the skid mark.

Q To do your work in this case, and to model the vehicle, you to referred to this VRTC study, right?

A Yes.

Q This is another exhibit from your file. Let me ask about this: Is this the study that includes that language?

A If you wouldn't mind making it a little bit bigger.

Q Sure. I made it too big. Can you read that highlighted part.

A "In response to incidents of unintended acceleration, UA, in Toyota vehicles, the National Highway Traffic Safety Administration, NHTSA, vehicle research and test center, VRTC, con ducted a Toyota Camry, quote, vehicle characteristics and performance study, end quote, comprised of 20 Toyota Camrys. Nine of the Camrys tested were complaint vehicles purchased from consumers that allegedly experienced incidents of unwanted acceleration."

Q What is other highlighted sentence?

A "No safety defects in the acceleration control systems were found during these vehicle characterizations."

Q Now, you modeled the vehicle, you adapted it, you changed it from the standard model in the program, right?

A Yes. But if you're talking about this, I didn't change the accelerator pedal and the brake pedal; that is something else they were looking at is the relationship between how far the pedal was up or back. That is not something that I used in my analysis.

Q You tell the computer what the important data is. You told the computer what the coefficient of friction was, you told us about that yesterday, right?

A Yes.

Q When you say coefficient of friction, that means the kind of surface that you have got. If you have a car going across here, you have to define this surface, right?

A Yes.

Q And you used a .7; is that right?

A No.

Q Well, for your actual reconstruction when you were doing your calculations, you used a .7, right?

A Yes. The initial hand calculations that I did I used .7; that is conservative. But then the actual calculations that I did, I did the VRTC data and I showed you yesterday that was a .83 to .86. Then I showed you the simulation where I achieved a .81 in that simulation, so those are the values that I used.

Q You actually used as high as 1.0 in your stimulations, didn't you, sir?

A Well, Mr. Walker has testified that it goes that high. What the simulation does, it applies an ABS algorithm, so it would have been a .6, .81, whatever it did.

Q So reality, according to your reconstruction, is .7. In your simulation you use .83 and sometimes 1.0, right?

A No. Reality is that I had a VRTC set of data and I had a computer car and I matched that computer car to the data. So whatever the data said, and in this case it was a .83 on average, that's what I ended up using.

Q Right. You tell the computer this information, don't you?

A Yes.

Q You tell the --

A That's the point precisely.

Q You tell the computer what the brakes are doing, right?

A Yes.

Q And you do this a lot of times until you achieve the result that you think is appropriate, right?

A Until I match the VRTC data as best I can.

Q You don't go out and measure a car or anything like that, you just change numbers at your computer, right?

A What do you mean "measure a car?" I've got volumes of research on this car with the measurements.

Q To make the changes that you made, you don't go out and measure a car, you just change numbers in the computer program?

A Again, I think we're miscommunicating here. I absolutely measure the car. I have, like I said, an entire file folder that I produced in my deposition of measurements of this car.

MR. JENNINGS: Those are my questions. Thank you, Judge.

THE COURT: Any redirect?

MR. ESDALE: Yes, ma'am.

THE COURT: Is it going to be long? If so, we need to take a break. I know the witness needs to get out of there.

MR. ESDALE: It will be a while.

THE COURT: We will take a quick break. We're in recess for 15 minutes. Ladies and gentlemen, do not discuss the case during the recess.

All rise while the jury exits.

(Whereupon, the jury exits the courtroom.)

THE COURT: We're back on the record. The court yesterday admitted, if I didn't do so on the record, Plaintiff's Exhibit No. 5368 and Defendant's Exhibit No. 1.

MR. JENNINGS: Your Honor, because of the ruling on -- during the cross-examination of Mr. McCort having to do with the use of medical records in his file, I was not permitted to ask him about the content of those records specifically so that I could point out that those records establish that Mrs. Schwarz suffered from dementia and ask him -- given the chance, I would ask him is that significant to you in taking what others say about what she said and evaluating it for use in your reconstruction.

In other words, he said that he listened to what people said about Jean Bookout. He listened to what people said about Barbara Schwarz and what they quoted her as saying. Well, if you're going to do that, is it reasonable to take into account that she was suffering from and had been diagnosed --

THE COURT: Is this your offer of proof or argument to me to change my ruling? I want an offer of proof.

MR. JENNINGS: This is offer of proof.

THE COURT: Make it an offer of proof as to what the evidence would have revealed.

MR. JENNINGS: The evidence would have revealed that the woman suffered from dementia and that that should be taken into account by him in receiving information about what she said and evaluating it. I would ask him: Would it be reasonable for you to take that into account in deciding whether you were going to pay attention to what people say and give credit to what people said about what Barbara Schwarz said. And the court has previously ruled that evidence of dementia goes in.

THE COURT: Thank you.

MR. ESDALE: Your Honor, there is one other issue that we needed to address before the jury comes back. I want to make sure in your ruling on the EDR, Event Data Recorder, the black box, I think two things have made that issue now relevant and material to the case.

One is Mr. Lentz's testimony where it came out that the EDR data was reliable and accurate. He was asking questions about whether it was inaccurate, couldn't be used. He said, no, that is not the case, it is accurate. We just had a tool that could download it. We were the only ones that had a tool that can download it.

More importantly, now the defendants have raised this issue of this triangle. And, specifically, Mr. Jennings elicited testimony that it was kind of a curb. And we would put Mr. McCort on the stand to explain it if we need to more specifically, but the instruction, the manual for the EDR and its categories where it will capture data says a curb strike will wake up the EDR and capture data.

They are going to try to come in now and say this vehicle hit the curb. We think, well, if it did, the EDR should have captured the data because the manual says it will.

MR. JENNINGS: Well, that is outsided the scope of direct examination of this case.

THE COURT: Didn't you raise that in your cross?

MR. JENNINGS: Of course I did. He raised it in his direct in tracking the path of the vehicle during the crash, and he said that it went across the island. And so I'm now put in the position of needing to ask him about that.

THE COURT: I still don't understand why the EDR -- there is no testimony that the EDR worked, right?

MR. JENNINGS: And he doesn't know anything about it.

THE COURT: I'm asking him. There is no testimony that the EDR even worked, is there?

MR. ESDALE: There is not. But the manual says it should have if it hit a curb.

THE COURT: But you have no one that will testify as to why it did or didn't work?

MR. ESDALE: No, ma'am, I don't.

THE COURT: Then that ruling stays the same.

MR. BAKER: May I tell you something, your Honor? It is not whether it worked or not. He can say that according to manual if it hit a curb it should have recorded data. He looked at the data. There was no data.

THE COURT: There was no data whatever, though, correct?

MR. BAKER: Related to curb strike.

THE COURT: I thought there was no data whatsoever on the EDR.

MR. BIBB: There is no data at all.

MR. BAKER: Right. So if there is no data, the point goes to what he is saying about there is this big bump where it hits the curb. If that happens there should be data. All he can say is there is nothing on there.

THE COURT: Let me ask this: In the sense, Mr. Bibb, that there was no data whatsoever was it because -- I thought there was no data because something had misfunctioned or something on the EDR. It just didn't record any data even when it hit?

MR. BIBB: Apparently nothing in this crash, including whatever curb strikes or anything else, resulted in a sufficient longitudinal -- that's deceleration lengthwise down the vehicle over a specified period of time.

THE COURT: I thought the issue all along was you were suggesting the EDR recorder did not work.

MR. JENNINGS: They were.

MR. BAKER: That's not what we're saying.

MR. JENNINGS: That is what their lawyer said in the opening statement.

MR. BIBB: I think the suggestion the plaintiffs want is because the EDR did not record anything in this event that there, therefore, must be something wrong with the electronics in this vehicle.

THE COURT: I thought that the suggestion -- I thought all along you were suggesting, wanted the jury to think that the EDR didn't work and that was another defect in the --

MR. BAKER: No, ma'am.

THE COURT: That is what was said in opening even that the EDR didn't work and that, therefore, that was another defect. So you're saying there is no information that the EDR didn't work, it just didn't record any data?

MR. BAKER: On what we're saying right now, that's right, your Honor. We're not talking about the opening. I'm talking about what he has said on his cross-examination. He has indicated there was a lateral impact that would make a difference on where the brakes made marks. What we want to show is that the EDR did in the record a curb strike when the manual said it would have if it was significant enough to make a difference.

THE COURT: Why would the EDR evidence not come in altogether, then? I thought the issue all along was you were suggesting that it didn't work and were trying to just throw something out on the table.

MR. JENNINGS: That's exactly what they were trying to do.

THE COURT: I'm saying now do you all disagree that the EDR was working it just didn't record any data?

MR. BIBB: In this crash, there seems to be nothing abnormal about the EDR. But the impacts that occurred in this crash were not sufficient to trigger a recording in this EDR.

THE COURT: Why would it not be relevant with what has been raised about the size of this curb to reflect that the EDR didn't reflect anything?

MR. JENNINGS: My objection in part is they just want to make him a reader. They just want him to come up here and read the manual for them.

MR. ESDALE: We're not going to do that.

MR. BIBB: As long as there is no suggestion that because the EDR is recorded in the air bag brains of the vehicle, not in the engine control module. And my concern of this whole thing has been that the suggestion that the

EDR didn't record anything would be implimatic (phonetic) that there is something wrong with the electronics in the vehicle.

THE COURT: That's what I took it was same along.

MR. BIBB: That's precisely. If there is any suggestion, we will be back up on our feet.

THE COURT: Yes. And I will be -- yes.

MR. ESDALE: I will just ask him what --

MR. BAKER: We're going to ask him if it recorded the event. That's it.

MR. ESDALE: Would you expected it to record something if it hit a curb as suggested.

MR. BIBB: It will depend on how big the curb is and what angle the vehicle hits the curb.

THE COURT: And I will allow you to recross on that issue too.

MR. JENNINGS: All right.

MR. ESDALE: Thank you, your Honor.

(Whereupon, a short recess was had.)

THE COURT: We're back on the record. Members of the jury and counsel their clients are present. Mr. McCort is on the stand and still under oath.

Mr. Esdale, you may give your redirect.

MR. ESDALE: Thank you, your Honor.

REDIRECT EXAMINATION

BY MR. ESDALE:

Q Mr. McCort, I believe you were asked some questions on cross-examination about the curb, the island, or whether or not there was a curb there. And I think you testified on direct examination that when you were actually out there and had a picture of it that was it was a --

MR. JENNINGS: Objection, your Honor. Leading. Same objection on the grounds previously stated.

THE COURT: Okay. I will overrule that objection. But I know you're laying a predicate. Do not lead the witness.

MR. ESDALE: Yes, ma'am.

Q (By Mr. Esdale) And you do remember that testimony?

A I do.

Q Then you were asked questions on cross-examination whether you recall testimony of Trooper Duerson and that it was some suggestion that it may have been like a curb. Do you recall that?

A I do.

Q Let me ask this: What is an EDR?

A EDR is an electronic data recorder, what a lot of people call the black box.

Q What does EDR or black box do?

A It will record data related to an event. So if an air bag deploys, if other events occur, it will record data sometimes pre-crash data, sometimes just the crash data.

Q And this specific vehicle, the 2005 Camry, the -- what would you expect -- or let me ask this: Are you familiar with the manual relating to -- the Toyota manual relating to the EDR in this vehicle?

A Yes.

Q And if the vehicle -- or what would you expect the EDR to show if the vehicle had hit a curb?

MR. JENNINGS: Objection, your Honor. Lack of foundation.

THE COURT: Sustained.

Q (By Mr. Esdale) The -- what does an EDR show?

MR. JENNINGS: Same objection, your Honor, no foundation?

THE COURT: Lay a foundation.

Q (By Mr. Esdale) Have you reviewed the EDR manual for this vehicle?

A I have.

Q Based on your review of the EDR manual for this vehicle, what type of forces would trigger the EDR to record data?

MR. JENNINGS: Judge, same objection. Lack of foundation, the fact he can read the manual is not expertise, and that hasn't been shown.

THE COURT: Overruled. You may answer the question now.

THE WITNESS: I have read the manual, and the manual states specifically that the EDR will trigger upon a curb strike, among other things.

Q (By Mr. Esdale) Have you reviewed the EDR data from this vehicle?

A I have.

Q Was there any type of curb strike or data recorded on the EDR in this vehicle?

A No.

Q I think you were asked some questions about some emergency brake testing that a Toyota experts had done. Do you recall that?

A I do.

Q And I think you were asked some questions about the speeds at which it was done. Do you know what speed the emergency brake testing was done it?

A It was done at 45 miles an hour.

Q What is your understanding for the basis of the 45 mile an hour speed that Toyota chose?

A My understanding is that Toyota's brake expert, Mr. Walker, did the testing, and he said that he chose 45 because that's what Toyota's reconstruction expert said was the speed, in other words, his analysis was 45.

Q Now, something else that you were asked about is whether or not Ms. Bookout was on the brakes. And I want to just, if you could, explain to the jury what the effect of losing vacuum assist in the brakes has as she's coming down through the area of your reconstruction.

MR. CLARK: Objection. Outside the scope of cross-examination. This is all direct-examination type stuff.

THE COURT: Did you not talk to him about the brakes and Mrs. Bookout on the brakes?

MR. JENNINGS: Not about the vacuum issue.

THE COURT: Did you discuss the brakes?

MR. JENNINGS: Of course.

THE COURT: Overruled.

THE WITNESS: The vacuum assist issue is that it's power brakes versus nonpower brakes. So you can still stop a car without power brakes, it just takes you a very long time to stop it and it takes a lot more force to press on the power brakes. So I don't mean to suggest that she took her foot off the pedal. I think she absolutely stayed on the pedal but she didn't have power brakes.

Q One other thing that you were asked about early on, and that is I think you were shown a research paper from the early '90s; do you recall that?

A Yes.

Q Do you have that paper up there with you?

A I do.

Q First thing that you mentioned and I would just like to clarify: Is it fair to use 1990, 1992 vintage model vehicles to compare to a 2005 vehicle as it relates to the braking system?

A Yes. As I think I said during that examination, I don't think it is fair. I think the vehicles are different. In particular, the systems on the Camry are going to be much more advanced than they were in '90 whatever.

Q And one of the things that you mentioned, you used an acronym like E-D-B-F or something like that?

A Electronics brake force distribution. Sometimes it is EBD, sometimes it is EBFD.

Q And what is that and how does it work?

A Break force distribution, if anyone has an old pickup truck that they drove, pickup trucks were designed to have brakes to support the fully loaded pickup. And most of the time you drive around a pickup that is not loaded and the rear brakes would lock up before the front would.

So brake force distribution is intended to prevent that. In other words, when you unload the rear because you're pitching forward, you actually decrease the force to the braking torque. And you do that through the ABS system, or Toyota does that. They do that front to rear and side to side. So the point that I've been trying to get across is that you wouldn't expect that system to leave a single tire mark. It will leave four tire marks, which would appear to be two tire marks laid on top of each other.

Q Is it your understanding -- what is your understanding that the tire marks would look like? I think you mentioned at the initiation of the ABS system, what do the characteristic tire marks look like?

A They vary. I have looked at ABS tire marks on literally the day that an accident happened, happened to be a friend, and you could just barely see scuff marks. Sometimes you can see darker marks, but the tell-tail sign is you see a mark, a skip, a mark, a skip. And usually they will be light marks. Because the whole point is you don't want to lock the tires up. That's what antilock means, you don't want to lock the tires.

Q You have that article that you were cross-examined with from the early '09s?

A Yes.

Q One part that apparently nobody chose to read is about some testing that was done. First, this testing was done in Europe, right?

A Yes. That is my understanding, at least it looks that way.

Q Well, when they spell tire, T-Y-R-E, it usually means

it is done in Europe, right?
A Yes.
Q And the -- one of the things that they talked about was testing that was later done in US. Do you know what I'm talking about there?
A I do.
Q What does the paper say about that?
A Well, that was some testing that Dan Metz did. Here it says:

> "Some later tests in the USA, reference 16, produced very faint marks on only a few occasions. And even then, the observers had great difficulty in determining the start and width of -- start and with car removed finish of them. No dashes were reported."

And I've actually seen that paper, and the folks looking at it were all trained accident reconstructionists.
Q And they had a hard time recognizing the start and end points of the ABS brake marks?
A That's right.
Q Now, there are thousands of SAE papers written about accident reconstruction and brakes and stuff like that, correct?
A Correct.
Q What does it tell you about the fact that Toyota had to go back to 1994 to find one article that produces marks

from an ABS brakes system?

A Well, I think it just shows that it's tough to do and you don't see it a lot.

Q Let me ask this: Irrespective of whether this was a parking brake mark or a mark from the service brakes, would this vehicle have stopped before it got to the edge of the road?

A Absolutely. There is just no possible way this vehicle can go through that curve and be at 60 miles an hour. So at 40 miles an hour, it absolutely stops.

MR. ESDALE: Your Honor, I think we have some agreed-upon exhibits we can offer.

THE COURT: We will do that during lunch.

Mr. Jennings.

MR. JENNINGS: Yes, ma'am. Thank you.

RECROSS-EXAMINATION

BY MR. JENNINGS:

Q Very, very briefly. Mr. McCort, you are not an expert on electronic data recorder, are you, sir?

A Well, I'm certified to download them, and I download them all the time. But I would say in terms of knowing the exact programming and electronics, I don't -- I wouldn't want to do that. But I'm very familiar with them. I use them all the time.

Q Do you remember testifying in this case -- I'm referring to your deposition at page 119, line 5:

"I'm not going to be an EDR expert in this case."

A Yes. I again read that last night. There is like --

Q The question is --

A -- three pages that we talked about it.

Q Excuse me. The question is simply this: Was that testimony given by you at the time of your deposition?

A There was testimony that I gave after I spent a lot of time talking about this EDR and what I would have expected and not expected to see on it.

Q Next question on that. You don't even know what the recording threshold of the EDR on this vehicle is, do you, Mr. McCort?

A Well, at the time of my deposition, I did not. I have since seen Toyota documents that tell me that. Yes.

Q Well, all I know is what you gave in your sworn testimony in August when you were testifying about that. At that time when you gave that deposition did you say, I don't know what the recording threshold is?

A Yeah. I think I said that things like post strikes and curb strikes will set it off, but I don't know the threshold.

Q You know that some things will be recorded, like a curb strike, sometimes they won't be. They -- it depends on circumstances. And you don't know, at least when you gave your deposition in this case, your official opinions in this case you didn't know, right?

A As I described, there is an acceleration rate at which this vehicle would trigger. I couldn't give you the exact number. I now know it, but at that time I didn't know what the exact number was. I said that curbs, pole strikes, those sorts of things will record in the EDR.

Q Mr. McCort, there are a lot of SAE papers since 1994 that talk about leaving tire marks with ABS brakes, aren't there, sir?

A Well, I don't know --

Q Or do you know?

A -- I don't know how many there are. I'm sure we can research and find some papers. You found one.

Q You haven't done that yet, have you?

A Done what.

Q That kind of research.

A No. Again, I base my opinions on my reconstruction and all the facts of the case.

Q I'm just asking about research, have you done that research?

A No.

Q Thank you.

THE COURT: Mr. McCort, you may step down, sir. As I indicated earlier, we will do the exhibits during the lunch break. Plaintiff, you can call your next witness.

MR. BAKER: Your Honor, we would like to play a video. We may need to talk about it before we do that.

THE COURT: Okay. How long is this video?

MR. BAKER: It will be just over an hour.

THE COURT: Okay.

MR. BAKER: Or, your Honor, we can do a short -- we can call Star Caudle by deposition. We can do that and get that out of the way.

THE COURT: Obviously it always takes us a while to go through the video depositions before we play them. I don't know which one this is going to be. Were there objections in Caudle that I need to rule on?

MR. TEAGUE: Your Honor, can we approach.

THE COURT: Yes.

(The following bench conference was had outside the hearing of the jury:)

MR. TEAGUE: We subpoenaed Star Caudle to come live. We haven't done the depo designations. We expected her to be called live.

MR. TAWWATER: We have. We did do depo designations, and we did not get counter designations back from them. I'm happy to read the deposition designations or I'm happy to read the entire deposition of this witness.

MR. TEAGUE: We can't do that. I don't know if there were designations we would have done to counter. I don't know if that is part of the last-minute revision or not. They indicated yesterday they were calling her live, and I have prepared for her to be here live.

MR. TAWWATER: As a matter of fact, I told Mr. Jennings on Monday that because of the way the scheduling was going that we would probably have to read her deposition. And he said, Well, then we might have to call her back. And I said, If that's what you want to do, fine.

MR. TEAGUE: He said he would call her back live then when we said that we would object. Is she here today?

MR. TAWWATER: No, she not here today.

THE COURT: This obviously is not going to work. Ladies and gentlemen, why don't you step outside for just about ten minutes and I will figure out what I'm going to do.

(Whereupon, the jurors exit the courtroom.)

THE COURT: Mr. Clark, are you doing the objections on Fukushima?

MR. CLARK: Yes, ma'am, but I don't think it is him that we're dealing with.

MR. BAKER: Morrison. You were given it this morning.

THE COURT: I have it, but I have not even looked at it.

MR. CLARK: They just told us last night, your Honor. We highlighted it as quickly as we could.

MR. BAKER: We told you before we left.

MR. CLARK: That's right, and we highlighted it as quickly as we could, but the court was gone by then.

MR. BAKER: I understand.

MR. CLARK: It may be, your Honor, we can have a discussion that dispenses with the need to go through this line by line, at least at this point. And that discussion would be this: You know, it is the plaintiffs' burden to show that an incident is similar. And plaintiffs in their papers on similar incidents said, and I think we agree, that when evidence is proffered to illustrate the existence of defect it, quote, necessitates a high degree of similarity because it weighs directly on the ultimate issue to be decided by the jury.

It is undisputed this incident occurred after Mrs. Bookout's crash. It is offered for defect. They also quote some language from the Tenth Circuit that says, and, again, I think it is inaccurate statement of the law, the rule requires substantial similarities among the variables relevant to the plaintiffs' theory of defect. Now, the plaintiffs' theory of defect, in this case, obviously the software. And we've got no testimony that would show that the software in Ms. Pries-Morrison's vehicle, which is six-cylinder '08 Camry is at all similar to the software in Mrs. Bookout's vehicle which is a four-cylinder '05 Camry. In fact, I believe that Mr. Barr's testimony is that he has had not reviewed the software for the six-cylinder '08 Camry in any depth.

THE COURT: So this was an incident that doesn't fall in under notice, and it is a 2008 Camry as opposed to '05. And you say the software is different in that Camry than the '05 Camry?

MR. CLARK: Yes. Because it is a different engine. It is a six-cylinder engine as opposed to a four.

THE COURT: And that makes the software different just the size of the engine?

MR. BIBB: Right. It manages the engine differently because you have six-cylinder versus a four-cylinder. But the similar incidents that Mr. Barr had in his St. John report, which is the report he's relying on for this case, had a number of 2002 through 2006 and 2007 and later Camrys that they were four-cylinder Camrys.

And as an officer of the court, I have to say the mitigation strategies, those are the strategies that would put the vehicle in failsafe should there be a software problem or any kind of problem with the vehicle, those stratifies for the four-cylinder Camry are the same for both the generation Camry we have in this case, '02 to '06, as well as the '07 and later Camry, but for the four-cylinder Camry.

And I think that's been Mr. Barr's testimony in this case. And those are the ones. And he is their defect expert in this case. Those are the vehicles that he identified as being what he based his other incidents on. And there is a whole list, like, 40 of them in his report.

THE COURT: Did he have this one of on his list

MR. BIBB: Is Pries-Morrison on that?

MR. BAKER: It is in his report.

MR. BIBB: In his report?

MR. TAWWATER: It is in his report.

THE COURT: So he says in his report that he did rely on it?

MR. BAKER: I don't have the report here right now, but it's in there.

THE COURT: Do I have a copy?

MR. BAKER: In the materials that we submitted to you, I believe you have the St. John report.

MR. CLARK: I think it on one of the DVDs.

THE COURT: Is it in there or is it not as something he relied upon?

MR. CLARK: Well, but that's really insufficient, your Honor.

THE COURT: First of all, let me make certain that

I understand: First we were discussing that it wasn't something Mr. Barr relied upon.

MR. BIBB: I withdraw that. I stand corrected.

MR. CLARK: At his deposition, Mr. Barr said that there were some of those that he was, in fact, not relying on. So I don't know the fact that it appears in his report necessarily means anything. In fact, he said he thought some of them were floor mat entrapment, that's what we think this incident is as well.

So I'm not sure that its appearance in his report is dispositive. I think what we need here is Mr. Barr here testifying to lay a foundation for this.

THE COURT: Do we have Mr. Barr's deposition close by somewhere?

MR. BIBB: On a DVD or CD.

THE COURT: Does anyone have a hard copy of it in here?

MR. BAKER: I'm sure we do, your Honor.

THE COURT: Can I see his language in his report again?

MR. BAKER: Yes, ma'am.

THE COURT: He says at the beginning of this that -- he has a lead-in page about other similar accidents. Considered as a whole these descriptions are consistent with the kind of partial software. Then he specifically references Exhibit F as his spreadsheet containing 46 complaints which I take it that's what this next document is.

MR. CLARK: Here is really the key, your Honor. Mr. Barr has a habit -- I will call it a bad habit, Mr. Baker might disagree with me -- of moving the ball. And the ball has moved since that report. That report does not contain the full throttle bug, which I understand it is now the centerpiece of his theory in this case, because it is the only theory he's got that can open the throttle all the way up like Mr. McCort just said it was.

As far as has been disclosed to us, he has not done no work linking any of those incidents to the full throttle bug. Certainly as of the time he wrote that report he hadn't done it. If that is his opinion, then we have a late disclosure problem, your Honor.

THE COURT: If he thought the software was similar, whether he's going to say full throttle or one of those other two things that he used, is this is similar software that he is talking about.

MR. CLARK: I don't understand that to be his opinion, your Honor. What I understand his opinion to be, and I think language that the court just read says this, is that he believes that there were software problems in these vehicles. If his opinion had been that he believes that this six-cylinder Camry with a completely different engine with completely different hardware -- I know it has completely different hardware, I don't know if it has completely different software -- had substantially similar software, I would have filed a Daubert motion on that. And, frankly, I think I would have won it because he has done no work to support that opinion. He hasn't even reviewed the source code.

THE COURT: He says it right in his opinion, right his report. Considered it as a whole, these descriptions of other incidents of unintended acceleration are consistent with the kind of partial software failures as described above.

MR. CLARK: What I'm telling you, your Honor, is the partial software failures as described above are not his theories in this case. Because his theories have changed since he wrote that report. What we need from him is something that says that this incident with this vehicle is consistent with what his theories are today not what his theories were when he wrote that report. I assume he will come to trial and testify about what his theories are today not what his theories were six months ago.

THE COURT: Okay. I want to read this footnote. Tell me: Is he -- I thought -- I didn't realize he was just -- perhaps I haven't realized a lot of things in this case so fair -- I didn't realize that he was relying completely on the full throttle bug.

MR. CLARK: Full throttle bug.

THE COURT: I thought he was saying --

MR. CLARK: I don't know.

THE COURT: I thought he said there were three different and that was one of the possibilities.

MR. CLARK: I don't know. Again, we get back to the problem of getting this case ready too fast and deposing the experts out of order. At the time that Mr. Barr was deposed in this case, Mr. McCort hadn't given his deposition. And Mr. McCort has now given his deposition and sat here in this chair and testified that it is his opinion that somehow the throttle opened to somewhere between 50 and 100 percent.

The only thing that Mr. Barr disclosed that can open the throttle, as opposed to sticking the throttle, is the full throttle bug, which does not appear in that report.

MR. BAKER: That is inaccurate, and I'm happy to respond whenever your Honor wants me to.

THE COURT: Where was this at? What was this called in here? Is it called McPherson?

MR. CLARK: Pries-Morrison.

MR. BAKER: It is at the top of the page.

THE COURT: Okay. Respond to his.

MR. BAKER: Yes, ma'am. Mr. Barr, in his deposition in this case, specifically said the full throttle bug alone is not really in play here. It would be the full throttle bug plus task death or partial task death. He also said -- and I'm just responding to their statement to you that somehow the throttle has to open -- I'm not conceding their other option.

He also said that if there was a memory corruption related to the throttle variable angle plus task death or partial task death or in reverse order that could also open the throttle. So there are different theories to that, your Honor.

But let me go back to the point here so far and the jury has seen. They have seen Mr. Lentz testify that all Toyota ETCS, all electronic throttle controls, are very, very similar.

THE COURT: But wasn't he specifically -- I tabbed that information. Wasn't he talking about certain models?

MR. BAKER: No, ma'am. He was asked in the very back of his deposition very specifically about his general statement made to congress. He tried to back out of it and say I'm not an expert but this is what they gave me to say. I have no reason to disbelieve it.

We also heard, based on what we have done so far, it's been argued by Toyota that taking your foot off the gas closes the throttle. We have also been told that applying the brake will stop the vehicle. Ms. Morrison's testimony, Pries-Morrison's testimony, she clearly says, I took my foot off the throttle. It did not stop. I put both feet on the brake. It did not stop. So it also goes the refute their position, not just defect.

THE COURT: You're saying we have this statement from Mr. Lentz that they similar or all --

MR. BAKER: He says it was the ETCS throttles are very, very similar.

MR. BIBB: But that's different from being the software being similar. You have to spot me on that one, Mr. Baker.

MR. BAKER: I don't know that I have to.

THE COURT: So we have the testimony of Mr. Lentz, which I will find my copy of, plus your expert saying that they are similar, and that is sufficient to, in your mind, to make them a similar incident?

MR. BAKER: Yes, ma'am. And one of the things that we discussed, just another factor, according to Mr. Barr, this vehicle has the same operating system as the car at issue. So that's just another factor in our favor that it is substantially similar.

THE COURT: And I think defendants agree it has the same, mitigation strategies was the word you used.

MR. BIBB: No.

THE COURT: I thought you said that it --

MR. CLARK: I don't think we agreed to that with regard to the six-cylinder Camry. In fact, the six-cylinder Camry, the software architecture is completely different. It is what is called torque based as opposed to angle based. That means that the way the software figures out how far the throttle should be open is based on the amount of torque as opposed to just the strange angle, which is how the vehicles in the '05 age did it.

In this time period, the '08 time period, the six-cylinder had been converted to torque based, but the four-cylinder had not been. So this is a difference that arises in the six-cylinder software. It is actually not present in the six-cylinder software in '05, but it is present between the '08 six-cylinders, which are three years newer, and the '05 four-cylinder.

Now, Mr. Baker mentioned -- did you want to read that, your Honor? I do have another point.

THE COURT: Go ahead.

MR. CLARK: Mr. Baker mentioned memory corruption, and that is actually important too because there are actually hardware differences between the '05 four-cylinder and the '08 six-cylinder that would affect the effects memory corruption.

The other thing of this, your Honor, and this maybe dispositive. At this point, this is not all at helpful to the jury because they haven't laid the similarity foundation, certainly Ms. Pries-Morrison is not going to lay it.

MR. BAKER: The fact that the court has the deposition can see what she says; that lays it. Also, the court has reviewed the report of Mr. Barr who has relied on this as part of his opinions as being similar. The court has judicial notice of that. And I also wanted to show one of the chapters that the court has from the Mr. Barr's work.

MR. CLARK: You're not showing a source code portion of that, are you?

MR. BAKER: Not to my knowledge. It is Plaintiffs' Exhibit No. 7217.

MR. CLARK: The court can if we clear the courtroom.

THE COURT: I think I have that.

MR. BAKER: But it just shows he lists the -- he lists --

THE COURT: He lists the 2007 to '10 V-6 models.

MR. BAKER: As having the same operating system, your Honor. That's just another factor that I'm just offering the court.

MR. CLARK: But that is just like saying that because they both run on Words, Work and Word Perfect are the same. The fact that the operating system is similar has nothing to do with whether the software is similar. In Photo Shop and Word are not at all the similar, even though they both run on Windows.

THE COURT: So this is the operating system that is being referred to in this document that he just read?

MR. CLARK: That's correct. And they have taken --

MR. TAWWATER: Can I make the suggestion? Why don't we do this: I don't think any of us anticipated this would be quite this involved, and we hate keeping the jury out. How about if we don't do this right now. We will do it later, maybe after Mr. Barr testified. And that may make a little more sense then. We will put our next expert on.

THE COURT: Okay. That is fine.

MR. BAKER: And that will give you time to look at it. Sorry for the inconvenience.

(Whereupon, the jury returns to the courtroom.)

THE COURT: Ladies and gentlemen, we're going to go -- unless someone has a plan, I would like to go from now until 12:3078 to get at least an hour of testimony in, then we will take a lunch recess from 12:30 to 1:30.

So, Plaintiffs, you can call your next witness.

MR. ESDALE: Call Dr. Rick Gill.

THE COURT: Raise your right hand, please.

(Witness sworn.)

RICHARD THOMAS GILL,

called as a witness, after having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. ESDALE:

Q Tell us your name, please, sir.

A Good morning. Richard Thomas Gill, G-I-L-L.

Q Where are you from originally?

A Well, I was born in Huntington, West Virginia. And my father and the rest of our family moved all over the midwest, ultimately ended up out west.

Q Do you have any relatives in this area?

A Closest relatives are in Lexington, Kentucky. Lifelong friends, spent many years teaching down at OU in Norman in engineering, but he is retired.

Q Dr. Gill, what is your occupation?

A I'm what is called a human factors engineer. I specialize in accident reconstruction and safety.

Q And I understand that you have a PhD in engineering. Would you prefer I address you Dr. Gill or Mr. Gill or Rick?

A My students just always called me Rick. Whatever you're most comfortable with.

Q If you would -- I'm going to call Dr. Gill. I feel better. You earned it. If you would, Dr. Gill, tell us what your educational background is, sir.

A Well, I started out with a bachelors of science in systems engineering which is a hybrid of the traditional engineering disciplines. From there, I went on to get a masters of science in the same field, area of specialization being human factors. Then I finished up with a PhD in mechanical engineering, again the area of specialization was human factors.

Q What is human factors engineering? Can you explain that?

A Sure. Human factors is the study of how people interact with what we called the built environment, things that engineers design and built. So it is a combination of two seemingly disjointed things. On the one hand, you have traditional engineering design, the underlying laws of physics and how you design and build things, and then that is tempered with an understanding of human behavior. How do people perceive information in the world around them, process it, make decisions to interact with that built environment. So it is a marriage of engineering and psychology.

Q When did this come about as a field of expertise?

A Really, I think it evolved over time. Some people say it was the first time motion studies started in the industrial revolution. But I think as a science it evolved around the World War II time frame.

Q Why or is there a cause for this evolvement?

A I think what happened in that time frame is if you look at the complexity of what we as mankind were designing and building what engineers were creating, we began to exceed the capacity of humans to control and operate those, and the mistakes were catastrophic.

Q Can you give us some examples of what you're speaking of?

A I think a good example to appreciate that relationship is there was particular aircraft in World War II that had a repeated history of crashing immediately on takeoff. They had the traditional engineers and accident reconstructionists come in, go through the wreckage. They concluded no mechanical failure, no electrical failure, no fuel failure. Time and time again you can guess what the failure was, it was pilot error, pilot error.

Finally, some Air Force general said, Let's get a psychologist in here and figure out why these pilots are killing themselves; that was the starting point. What they found when they had the engineers and the psychologists work together was a starting point to finally getting the answer that was very important. There was a strong correlation between pilot experience and the likelihood of crashing.

Now, the first time that I heard this story like you, Oh, yeah, yeah, I know that; that's what you would expect. Well, you're probably as wrong as I was. Guess who was crashing the plane? It was the expert pilots, not the novice pilots. The more the pilot flew, the more likely they were to crashed. And that really puzzled them.

Then the next thing they discovered was that immediately after takeoff there were two things that pilots had to do. First thing is bring in the big landing gears, the big wheels hanging down. A lot of drag. You want to know how much drag, put your arm out of your car window at 60 miles an hour. Now imagine at 150 those big landing gears hanging down. They would bring those in, the plane would get more air speed. With more air speed it would get more lift, and life was good.

But the second thing that the pilots had to do is bring in the flaps, curved extensions on the ends of the wings. Give you a lot of lift at low speed, at high speeds, again, it is too much drag and you don't need them. They then bring in the flaps. Now, the novice pilots, wanting to make sure they did everything right, as soon as they took off they look down at the center console, grab the landing gear, pulled it up, got their altitude and speed, looked down, grabbed the flaps, pulled it up, everything went fine.

You can probably guess what happened to the experts. They had done it hundreds and hundreds of time.

They took off, reached down, grabbed the control, but the two controls were identical. Sooner or later, guess which control they got ahold of? They got ahold of the flaps. And when they pulled the flaps up and they started to come in, the plane starts losing lift, it starts going down. Before they could figure it out and correct it, down the plane went.

Two important morals that we learn from this type of investigation. First, is what we call as engineers is falsely attributing the failure mode. What that means is if you do an accident investigation and you blame the cause of the accident on the wrong thing, pilot error, pilot error, pilot error, guess what, history repeats itself. You continue to have these same types of crashes.

Second thing that we learned that is very important is the notion when you have what is called a designed induced error. That is, if you look at the foreseeable behavior of a human operator, a pilot that has done this hundreds of times, is it foreseeable he will reach down automatically and pull up the lever as opposed to looking down and make sure it is the right one? It is a foreseeable error, it is a designed induced error.

How do they solve the problem? Same thing they do to this day. Landing gear control has the shape of a wheel on it, and the flats have a shape of the wing. Any pilot on any plane grabs the control, and they immediately know which control they have ahold of. So it was that type of thing that finally brought engineers and psychologists together.

Q You told us a little bit about your education. Any additional education that qualifies you for the field of human factors?

A Well, the typical thing that we always do in a profession, it is called continuing education, taking short courses, seminars. I had a sabbatical for a year when I was at the university and I studied accident reconstruction at Northwest Traffic Institute up in Chicago, so things like that.

Q Any licenses?

A I am. I am what is called a certified human factors professional, so I'm board certified in human factors.

Q Tell us about your academic experience.

A Well, professionally I worked at two different universities. I started out at Wright State University up in Dayton, Ohio. I was program director for the human factors engineering program there. I held joint appointments both in the College of Engineering and the School of Professional Psychology. The focus of my teaching and research was on human factors, but I did teach classes in traditional engineering and traditional cognitive psychology.

And part of my assignment was to work on a committee in the university to create a PhD program in human factors. And I left Wright State University in '84 to move to the University of Idaho. And the purpose of that was to start a graduate program in human factors. And I this it was around '86 to '87 we finally got that program approved by the board of regents. Then same thing, until my retirement I held joint appointments, College of Engineering, College of Psychology. Focus of teaching and research was in human factors.

Q Can you tell us about your professional experience.

A Well, I worked in private industry as an engineer for a number of years. I also worked civil service as an engineer for the U.S. Air Force in the human factors research lab. And also in the aero medical research lab. I started a company called Applied Cognitive Sciences in the early '80s specializing in human factors, accident reconstruction and safety.

Q Again, I think you touched on it, but what kind of work do you do at Applied Cognitive Sciences?

A Again, the focus is human factors engineering. We started out primarily writing research grants to big industry and federal government. From there, we started consulting with private industry and industry and human factors and safety. The third area that we got into is to forensic engineering, testifying in court in terms of human factors engineering and safety accident reconstruction.

Q Anything else on your resume that you would like to cover?

A No. I think in terms of the facts of this case that is the most important things.

Q All right. Can you give us some examples of some of the -- well, like, you mentioned you were also an accident reconstructionist; is that correct?

A That's the focus of what I do within human factors is accident reconstruction and safety. Yes, sir.

Q How many automotive accident reconstruction cases have you done?

A Oh, boy. Over the last 30 years, I've probably been retained on upwards of 2,000 accident reconstructions overall of all types, aircraft, automotive, you name it. Just strictly automotive is probably 25 percent of my work. So I would say over 500 cases in the last 30 ears just purely automotive accident reconstruction.

Q Just real quick, can you give us any examples of any other type of reconstruction accidents that you have been involved with involving different things other than automobiles?

A Sure. I studied it when I was in graduate school, so I worked with major professors on a whole range of accidents that they were involved in. Some of the high-profile cases, if you will, is I had the opportunity to work on the three-mile island nuclear accident, accident reconstruction with my major professor.

When the U.S. Air Force first came out with the F-16, their new state-of-the-art fighter plane back in the late '70s, I was selected to be on part of the Air Force's multidisciplinary accident reconstruction team. Like I said, I've studied it, I taught it, cases from the construction accidents to railroad accidents, automotive accidents, recreational accidents.

Q Have you ever been retained to work on accidents similar to what we have here today?

A A number of times. Yes, sir.

Q And do you generally work for plaintiffs in cases or defense or a mix or how does that work?

A Well, on civil-related cases like this, if you look at all the categories of cases, I would say it is typically 75 to 80 percent for the plaintiff. On just pure automotive cases, maybe 60 percent plaintiff, 40 percent defense. Criminal matters, probably 95 percent defendant.

Q Do you charge for your time?

A Well, the company does. Yes.

Q Okay. How much? What is your rate?

A The company charges 380 an hour for my time.

Q Let's go to this case, Dr. Gill. When were you first contacted in this case?

A Back in the first part of March of this year, March 6, I think it was.

Q By whom were you contacted?

A As I recall it was you.

Q All right. What did I ask you to do in this case?

A Well, in short, it was to apply my training, experience and expertise to analyze driver behavior in sudden unintended acceleration events, SUA, and in particular Ms. Bookout's behavior. And the second thing that you asked me to do was then to look at any analysis and testimony from defense experts and within my area of expertise.

Q Did any of our -- during any of our conversations, did I or anyone else with our firm indicate to you a result that we wanted?

A No. If you had, I wouldn't have been working with you.

Q All right. Tell us what as a human factors expert how do you go about saying that I need to analyze this accident? Do you try to gather materials or do you need to go to the site? What do you do to be able to give yourself enough information to formulate the opinions that you're comfortable with?

A Good question. No two cases are alike. Some cases you absolutely have to go to the scene, some cases you absolutely have to analyze the equipment that is involved. In other cases, such as this, you can rely on what we call the discovery material, police reports, photographs, depositions of the various witnesses, other expert reports. And that's what I did in this case is I relied on the discovery material that was available to me.

Q Based on your review of the discovery material, did you gain an understanding of the basic accident reconstruction, kind of the facts of how this case occurred?

A I did.

Q And what is your understanding of that?

A The key facts from my perspective it was a 2005 Camry. Ms. Bookout was driving on Highway 69. She had a passenger, Ms. Schwarz. They were getting off on an exit. In the process of getting off on the exit and slowing down, the driver, Ms. Bookout, perceived that her brakes were failing, not functioning properly.

Ultimately she was unable to stop the vehicle before she ran out of roadway and crashed after crossing the side road on the other side into the hillside severely injuring the two of them.

Q And based on the work that you've done in this case and your review of all the materials that you discussed with us, have you formulated some opinions?

A Yes, sir, I have.

Q And what I would like to do, can you tell what you say those are? And I would like to write them on the chart. Guide me through doing that.

A I think there is three key opinions that are important to discuss today. The first one is that I think it is a common response for a driver experiencing an SUA event to pump their brakes. And as a subset of that being a common response to pump your brakes, I believe given all the facts of this case I think it is more likely than not that Ms. Bookout pumped her brakes.

Q Okay. I will try write to write bigger.

A The first opinion, common response that you would pump your brakes.

Q Now, he probably spelled better than I do.

A No. I'm an engineer.

Q Did I get that right?

A Common response to pump brakes. Ms. Bookout did pump. Yes. That's the first opinion.

Q Okay. What is the second opinion?

A The second opinion is I believe that in an SUA event that if someone pumps their brakes it is foreseeable that they will perceive they have bake failure. So foreseeable perceived brake failure.

Q All right. What is the third one?

A Then the third one is, again, restricting our attention to a SUA event where someone has pumped the brakes, there will be a subgroup of people that simply will not be able to stop the vehicle. So some people can't stop the vehicle.

Q Let me ask about that. You said after they pump the brakes. And I want to be clear. Are you familiar with the concept of vacuum depletion?

A Very much so.

Q Is that why you're saying that some people can't stop the car after they pump the brakes?

MR. BIBB: Objection, your Honor. Leading.

THE COURT: Sustained.

Q (By Mr. Esdale) Why are you saying that some people can't stop the car?

A There is a host of reason. But the primary reason on a SUA event is that if someone pumps the brakes, vacuum depletion kicks in and it becomes unlikely, a certain subgroup of people. Even without pumping some people can't stop the car.

Q So this is -- is that fair characterization?

A Some people cannot stop after pumping brakes in particular. Yes. I would agree with that.

Q All right. Now, let's talk about these a little bit.

We will start with your first opinion that it's a common and foreseeable response to a SUA event for the driver to pump the brakes, and Ms. Bookout likely did so. What is the first thing that you did to arrive at that opinion?

A Well, the starting point in doing a human factors engineering analysis to look at what we call operator behavior, the behavior of the person interacting with the machine, in this case the driver with the car. The first thing we do is look at stimulus response pairs. What I mean by that is you look at the tasks, the individual components of work that the driver has to do, adjust their mirror, tune their radio, maintain speed of the vehicle.

And for each task, you look at what information or stimulus, as we call it, what information or stimulus does the driver need to perform that task, and what are the foreseeable ranges of responses they have available to complete that task. And it is called the stimulus response paradigm. Engineers have been doing this for a hundred years. We look at the world as a black box and say what stimulus goes in and what response comes out; that's how we understand what goes on in the black box.

Cognitive psychologist have been doing it since the advent of human factors in the late 1940s, the stimulus response paradigm. So that is the starting point.

Q How do you apply that stimulus response paradigm to analyze driver behavior -- I have been saying SUA, is that a sudden unintended acceleration event?

A Correct. It is.

Q All right. And so tell us, then, how do you apply that to an SUA?

A Well, if we, as a starting point, apply that to an SUA, that driver's task that is most relevant, I think you can figure this out. If it is an SUA, the most relevant task is maintaining proper speed. So if it's a question of maintaining proper speed, the stimulus is how fast is the car going. The response is what do I do to manipulate that speed.

Then in driving, it is something we do all the time. But if you break it down into these little components if it is an SUA you sense the speed, you sense that it is too high. You respond by trying to reduce the speed. You then sense the change in speed or the new speed, respond accordingly. There are these little snippets in time that all get blended together, one continuous response because we do it so much.

In other words, take Ms. Bookout's situation. She is getting off the highway coming onto an exit ramp. She knows she needs to maintain speed. How will she do that? She will sense her speed and respond by slowly letting off the accelerator, respond by slowly depressing the brakes. I describe it in these little discrete pieces because that's how we analyze it as engineers. In reality for us as drivers it is a continuous fluid process. So that is the methodology that would be uses.

Q So in your analysis, if an operator senses a given stimulus, for example, the speed too high, how do you determine what their response will be to that?

A Your example, the speed is too high. The next question is what are the available tools, what are the options that the operator, the driver has to control speed? And in a car there are two primary controls that we use all the time. You know what they are, the accelerator pedal and the brake pedal.

How do drivers use those? We're taught to drive with our right foot only. We are taught to do those controls sequentially. Reduce the acceleration pressure, the force on the accelerator pedal, the car will respond if it is functioning properly by gradually slowing. If that's not enough and you get all the way to no force on the accelerator pressure, accelerator pedal, the next step would be to turn to your next control and start to apply pressure to the brake pedal, continuing to sense that speed responses by adjusting your pressure until you achieve the desired speed.

Q So, again, you're saying if a driver senses they're going too fast, they take their feet off the accelerator pedal. Then if they are still going too fast the next response is to press the brake. But what if that doesn't work?

A Well, good question. Go back to that stimulus response paradigm. It is working so far, they sense they are going too fast, they start to let off, they sense they are still going too fast, they let off a little more, they sense too fast, they brake, they are still going too fast. And if they're still going too fast and they are braking, what are they going to do? Brake a little harder. In other words, you start to push a little firmer, a little harder than what you're used to in your car to get that speed down. So the response is brake harder.

Q And, now, you're familiar with Ms. Bookout's testimony from her deposition in this case?

A I am.

Q And is it your understanding she is coming -- and I think you already told us -- coming off the freeway or the highway getting off the exit ramp, and then she talks about feeling like the car wasn't responding and she started --

MR. BIBB: Objection, your Honor. Leading.

THE COURT: I will overrule that to let you lay a foundation. Go ahead.

Q (By Mr. Esdale) Tell us, how do you analyze, based on Ms. Bookout's testimony and what occurred as she is going down the ramp and she is pressing the brake, carry us through that.

A If I pick up where we left off with the stimulus response paradigm, she has gotten to the point where she is not slowing at the rate that she wants to be and she needs to be slowing. She is pushing as hard as she can effectively. She realizes, I'm running out ramp. Given the speed and the distance left, I've got to do something else. Not surprising, her perception is, That my brakes must not be working. I'm pushing hard on my brakes, and my car is not slowing the way I'm used to it slowing.

One of the things that will happen when drivers perceive that their brakes are not properly function, their brakes are failing, some drivers have been trained, particularly us more experienced drivers, we're trained to pump the brakes. And I believe that's -- given all the information that we have about the facts of this case is what her next likely response to the stimulus was, was to attempt to slow the car by pumping the brakes to try to build up pressure.

Q All right. What I would like to do, do you have some reasons that you believe that she pumped the brakes?

A I think there are several important reasons. Yes.

Q I will try again. Tell what you say those are.

A The first one is it's a common response to perceive brake failure. Second reason I believe that more likely than not Ms. Bookout pumped her brakes is her own testimony, so eyewitness testimony. Third reason is I think it is just if you look at the science of human factors engineering it is a predictable human behavior under those circumstances.

Fourth reason would be other SUA cases where the drivers, passengers and eyewitnesses have offered observations and testimony that the driver was pumping the pedal, what they thought was the brake pedal.

Q I kind of paraphrased. I couldn't keep that train of thought. Is that okay?

A Others --

Q Other SUA cases where evidence showed pumping?

A Perfect. Then the final one is just studies involving driver behavior when they're experiencing an SUA. Studies on driver behavior.

Those, I think, are the five key reasons that support my opinion why I believe Ms. Bookout, more likely than not, pumped the brakes at some point as she is going down the ramp.

Q Well, let's talk about those in a little bit more detail. The first one, it is a common response particularly in more experienced drivers. Can you explain that a little more, please, sir.

A I think the starting point to appreciate this is to understand what we call a person's mental model or expectations. And that is when you get in your car today to drive, you have a certain expectation of I have to put this much force on my brake pedal and if I do I will slow this amount. And, Boy, if I push a little harder, I will slow a little harder. And you have mental model or expectation of the relationship between the pushing on the pedal and how your car responds.

So if you have that expectation, now go back and look at the situation that someone like Ms. Bookout describes or a person that is experiencing an SUA. As we just worked through before in the beginning of this, one of the foreseeable responses is that people are going to perceive that their brakes are failing. In other words, this mental model of that they have of, Boy, if I push this hard, I slow this much, I'm pushing really hard, I'm not slowing much. My brakes must have failed.

If people arrive at that conclusion, which some people will, the next step, then, is, what do you do if you have brakes that you think are failing? Are they failing because you have air in the lines, you have a leak in the lines, they're out of adjustment? One of the things that drivers are trained to do if they believe that brakes are failing is to pump the brakes. You see it in driver ed manuals, you see in driver training courses, you see it in defensive driving courses, you see it in state driver manuals.

I looked at all 50 state driver manuals. Over 40 out of the 50 states, the driving manual specifically says if you're in an emergency situation and you think your brakes are failing, pump the brakes, Oklahoma being one of those. So it is a common response to a perceived brake failure.

Q All right. Let's talk about the second one, the eyewitness testimony. Can you explain to us how that applies in this situation.

A I think there is two pieces to Ms. Bookout's testimony that are critical to this component. One is she makes no bones about it. She says, When I didn't think my brakes were working, I pumped my brakes. In fact, she said it was automatic. To her, it was an automatic response to pump her brakes, and she said that several times in her deposition that she tried stop the car by pumping the brakes.

The second piece, that is more subtle and we will get to more detail later, is she also had the perception than her brakes failed. That is tied to this concept of vacuum depletion and pumping. Because if you pump your brakes and you deplete the vacuum, guess what, she is right.

Effectively, her brakes aren't working. So her testimony of perceived brake failure is absolutely consistent an what you would expect with someone who has pumped her brakes.

Q All right. And you say this is predictable human behavior?

A Yes, I believe it is.

Q All right. And I think what -- can we go back to the stimulus response paradigm we have been discussing?

A If we back up from a driver of a car, back up from an SUA and look at the stimulus response paradigm for just people interacting with things engineers built, let me give you some everyday examples that I think you can appreciate and may have experienced yourself. You go out in the hallway to get on the elevator and you push the button and call the elevator. The doors open, you step on. What is your next task, the next stimulus you're looking for? The floor you want to go to.

As you reach your finger out and push on that control, what is your expectation. The light is going to light up. Now, if I push on the control and the light doesn't light up, what are my likely responses going to be? Push a little harder. If it doesn't light up, do I let off the control, get out of the elevator, go out in the hall, let the doors close and wait for another elevator to come? Not me. I push the button a few more times. It is a common everyday response that when you put a control in play in and you don't get the expected response you try that again before you move onto the next.

Another one that I experienced many times is I pick up the remote control, I try to turn the volume down, it doesn't go down. What do I keep doing? I keep pushing on the button trying to get it to work. Last night when I got to my hotel, I went to the night stand to turn on the lamp. I turned the little knob on the light, it didn't turn on. I didn't start feeling to see if there was a bulb or look to see if it was plugged in, I kep turning the switch.

It's a common human response that when you go to a learned automated response of putting a control input in and you have an expectation and that expectation is not met, before you give up, before you go off on a whole new tangent, you try again.

Q All right. Let's look at the next area, and that is that pumping the brakes is commonly reported by other drivers and witnesses in a sudden unintended acceleration incident.

A Couple of things here that I think are important. As I said earlier, I've been involved in a number of other SUA events that are very similar to the facts of this case. Without exception, in all of those cases, the driver, the passengers or the eyewitnesses, or the combination thereof, describe the situation where the driver was repeatedly pumping the pedal.

Now, I will give you there is a dispute between the defendant, between Toyota and the plaintiffs, of what pedal was being pushed. And I'm not involved in that dispute on these cases. What I'm trying to say is what wasn't disputed is that the driver, when they're trying to stop the vehicle, didn't just push and keep pushing, they were pumping. It's what you see time and time again.

One of the things I had the opportunity to do in those cases was look at what is called the FTR, field technical reports, investigating a number of complaints of SUA events.

MR. BIBB: Objection, your Honor. This is beyond the scope of what he relied upon at the time of his deposition.

THE COURT: Please approach.

(The following bench conference was had outside the hearing of the jury:)

MR. BIBB: Is he going to be talking about what is in those FTRs disclosed? It is not in his file.

MR. ESDALE: It is part of the St. John report if I'm not mistaken. And the only thing he will say is he reviewed the reports, and after reviewing these reports it is reported in there that people pulled the brakes.

MR. BIBB: If that's all they're going to ask that is fine. I will let that go.

THE COURT: Okay.

(Within hearing of the jury:)

Q (By Mr. Esdale) All right, Dr. Gill, I think you were saying that you looked at field technical reports?

A I did.

Q And that is just a document where will somebody -- is created where somebody has a complaint about something?

A Correct. It was a complaint about an SUA event and it was a documentation of the investigation that was done. And I looked at hundreds of those. What you would see in many, certainly not all, but in many, a common theme was the driver, the passenger or the eyewitnesses talked about seeing the driver repeatedly pumping the pedal, brake lights going off and on, seeing a leg go up and down, the testimony of I'm trying to stop and I'm pumping what I thought was the brake pedal. The key being consistently what you see is people describing pumping a pedal in a response to an SUA; that's the point I'm trying to make.

Q And the last part is your opinion that it was likely that Mrs. Bookout pumped the brakes. And you said there were studies that show that?

A I think there is two that are worth talking about in this. One is what is called the Weller SUA event, and the other is the Cooper study. Those are the two that I think would be insightful.

Q Let's talk about Weller.

A The Weller SUA event is one that got a lot of news media coverage. It happened back in 2003. It was an SUA event through a crowded marketplace in Santa Monica, went on over a significant distance and a number of people seriously injured and killed. NHTSA, the National Highway Transportation Safety Administration, came in and did an in-depth thorough investigation.

What they concluded that is relevant to my opinions here is that they concluded that the driver, Mr. Weller, was repeatedly pumping the pedal. Now, Mr. Weller thought it was the brake pedal, but bases on the accident reconstruction, the time speed distance analysis that NHTSA, did they concluded that no, it was probably the accelerator pedal. But the key point here is when drivers are in an SUA event and they can't get the car to stop one of the common responses is pumping on the pedal. And that Weller investigation by NHTSA showed that.

Q Now, another example you mentioned was the Cooper study. Can you explain that.

A Yes. This was a study that initially the basic concept of the study came out of the work that I did in my early involvement in some of these early SUA cases. And that is, I couldn't find any literature directly focused on studying driver behavior to SUAs. It was all things kind of on the fringes. And I thought it would be important to do a study to look at driver behavior for an SUA and in a particular to ask the question do drivers pump their brakes like all the evidence would indicate they do.

Ultimately, what happened is we brought Dr. Doerzaph from Virginia Tech Transportation Institute on board, one of the world-recognized scientists in studying driver behavior and doing driver research, and Dr. Cooper out of the University of Utah. The three of us with the two of them taking really the lead on designing the experimental protocol, we did design an experiment to study driver behavior during an SUA.

Ultimately Dr. Cooper was the one that did the heavy lifting, if you will, the running of the subjects, the collecting of the data, the analysis and writing of the report. In short, what came out of that is one of the common responses, as we expect, to a driver experiencing an SUA was to pump the brakes was a common response.

Q All right. Can you tell us again, without going into a lot of the details, what some other important findings of the Cooper study were?

A Well, maybe to do that I should tell you a little bit more about the study, because the findings wouldn't make sense if I didn't fill in the blanks for you if that's okay.

Q All right.

A Basically, subjects were recruited from the ages of 35 to 75, so pretty good spread of age of subjects. The vehicle that was used in the study was a 2005 Camry. It was fully instrumented. What I mean by fully instrumented is that all kinds of important data were recorded. Foot pressure pedal on the brake, pressure on the accelerator, brake lights, speed of the engine, how much vacuum assist there was in the engine.

There was a hidden video camera down on the foot wells so you could see the position of the driver's feet on the pedals, so all of this data is collected. The actual testing is done on a closing driving course where the public is not permitted to be. In short, what happens is the subjects, the people that were recruited and paid to be volunteers in the experiment, were to drive the car, and Dr. Cooper, the experimenter was in the passenger seat, and he would give them a series of tasks to do under the guise it was a driver preference study, wanted to see what drivers prefer.

So drivers would accelerate up from a stop to a certain speed. They would then gradually slow down to another speed. They would stop. They would go through a slalom course. The whole idea of these mundane tasks was to get the drivers familiar with the car and comfortable and relaxed in what they were doing.

Now, as this process is going on, for me, the most important task was the next one that Dr. Cooper gave them to do. He said, What I would like you do is start from a complete stop. Just as you would in traffic, accelerate up to about 20 miles an hour, maintain a constant 20 miles an hour. And if you notice down the road there is a wall of cones, a traffic -- plastic orange cones sitting up. Just as you would in normal driving, when you get close I want you to slow down and stop just in front of them like you normally would do.

As the drivers are doing this, and life is good, everything is going along like all the other mundane tasks they have been doing, when they get within about 90 meters, about 300 feet, Dr. Cooper flips a hidden switch and suddenly the car takes off, wide-open throttle. And all of the data that I told you about was then recorded to see what did the drivers do to this SUA event.

And, in short what we found as I said before, the short answer is they pumped the brakes as a common response.

Q All right. Any other details that you want to bring out about that studies, finding that were important to you?

A Now that we understand I think the basics of that part of the study, there were other experiments within the study that we may talk about later. For that part, some of the interesting findings for that section of the study, Dr. Cooper ran 60 people through. Of the 60 people, 58 out of 60 their initial and primary response was to hit the brakes. What did the other two do? One served to avoid the cones and the other didn't do a thing. They just panicked, froze and ran into the cones.

Of those 58 that did brake, Dr. Cooper then analyzed, Well, was there any indication of pumping. And he really broke it down into three categories, what he called partial pumping where you could see that the driver pushed on the pedal, pushed a little harder and then relieved some of the pressure and then again pushed hard. But a relatively minor fluctuation in the pressure.

He also found there are what we call clear pumps and complete pumps. The clear pump was looking at the video of the food pedal you see the driver's foot come off the accelerator onto the brake pedal, push the pedal depress, and then the driver's foot and pedal come back up to the points of the pedals essentially back where it started, and then the driver pushing again; that's what he called the clear pump.

A complete pump was the driver's foot came up so far that the brake light switch literally went off, the brake is all the way up. Or momentarily you can literally see the foot leave the pedal and back on. Of those three categories, over 45 percent of those 58 people performed one of those three types of pumps. Over 10 percent was the clear pump, and over 8 percent was the complete pump. There is no question that what that study showed is that one of the common responses for drivers experiencing an SUA event is to pump the brakes. It ties back to the perceived brake failure in my opinion.

Q And the bottom line is what is the most important conclusions that you draw from the Cooper study?

A I really give you three things. Number one provides further support and foundation for my opinion that a common response is for drivers to pump in an SUA event. Number two, just look at the data, over 45 percent pumped in some fashion, nearly 20 percent had either clear or complete pumps. In other words, brake pedal is hardly applied, virtually entirely released, and hardly applied again. And you can see where that goes with the vacuum depletion.

Third is in my opinion it completely refutes any opinions of defense experts that their driver never pump their brakes in an SUA. Clearly that's not true. Those are the key things of that part of the study.

Q All right. Let's move on to opinion number two, and that is that it's a foreseeable perception of the driver in a sudden unintended acceleration event that their brakes are not working. Tell us what you base that opinion on.

A I think there is three pieces to the puzzle. I will tell you those, then we will put it together because this is pretty simple and short. One is pumping the brakes, two is the vacuum assist system with the brakes, and three is a partially open throttle, partially or full open throttle, doesn't matter.

If I take those three pieces, and as we've been talking, I think a common response for drivers if they perceive that they have brake failure is to pump their brakes in an SUA event. Now let's take the second piece, the vacuum assist. Way back when when I started driving cars they what were called manual brakes, there were no power assist. You had to push on the brakes and they had pretty good size lever arm on the pedals, but it worked.

Then somebody came out with power assist brakes, the hydraulic brakes. And I will tell you, the first few times I drove that I took a bite out of the steering wheel because my relationship of how hard you push to how hard you stop I had to get a new one. The Camry has what is called vacuum assist power brakes. What that means is when you step on the brake pedal with a certain amount of force, the vacuum within the engine amplifies that force.

Now, I find it easier to think in terms of numbers. The average nominal firm braking force that I think all of us agree with for a typical driver for a car like this is about 10 pounds; that is a good firm stopping brake pressure. The vacuum assist, if it's working properly, gives you a gain of 7 to one. What that means is whatever force you apply is multiplied seven times over before it goes into the hydraulic cylinder for the brakes; that is a 700 percent increase, that's why they're power assist brakes. Ten pounds becomes 70 pounds.

Now, what happens in day-to-day driving if you're in traffic and you are repeatedly stepping on and off the brakes or pumping the brakes? The good news is we drive with our right foot. How did you get your foot on the brake? You let off the accelerator. Where is the engine? Idle. The engine is at idle, you can push on the brakes all you want and it just replenishes the vacuum.

All right. Now here comes the problem, the partial or wide-open throttle, the third piece. If you have an SUA event and the throttle is partially to wide open, when you step on that brake you deplete the vacuum. So when you go to pump the brakes, the vacuum is gone, your brake efficiency, if you deplete the entire vacuum drops 700 percent.

Now, if that's not enough to make you think your brakes aren't working, let me add one more last piece to that puzzle. What is the throttle doing? If I don't have an SUA event when I let off the gas, engine braking. The car slows from wind resistance, rolling resistance, the engine tries to slow me. If that throttle is partially to wide open, when I let off the accelerator pedal to go to the brakes, what is the engine doing? It is trying to speed me up again. It is no wonder drivers in an SUA event, if they pump their brakes, it is no wonder that their perception is my brakes aren't working. They have lost 700 percent of their efficiency and the car is trying to speed up.

Q All right. Anything else on opinion two?

A I think that covers it.

Q All right. Let's go onto opinion three. And that is that if a driver pumps their brakes without vacuum that some of them will not physically be able to stop the car?

A Correct.

Q Explain that to us.

A Couple of things that I think there are noteworthy. You can see the underlying problem is, Can I put enough force on the brake pedal to stop this vehicle. Well, let's look at the factors that affect the ability to put force on a brake pedal. One of the primary factors is a person's age. Our strength increases from birth to about mid 20s, then it levels off, plateaus. Bad news is by the time you get to your mid 30s it is all over with. It starts diminishing and we lose strength at about 5 to 7 percent every decade from our mid 30s on. So older people naturally are not as strong as a young college athlete.

Another factor that is important is stature. I think you can see this in your mind's eye. The taller a person is the bigger their legs, the their more lever arm advantage they have with their legs the more force they can generate. The shorter a person's stature, the less force. Weight is another. A smaller lighter person naturally isn't going to have the leg strength as a bigger heavier person.

Gender is a big factor. Generally speaking, if you equate everything age for age, height for height, pound for pound, generally speaking men are about 35 percent stronger than women. So if you look at age, height, weight, gender, lo and behold it is not surprising that older, smaller women are more frequent victims of SUA events than younger, taller heavier men. It's just simple biomechanics of the forces they can generate. So that would be one of the reasons why that's the case, and there are several others.

Q Okay. Go ahead and tell us what the others are.

A I think another compelling argument is to look at the data from the Cooper study. I said there were several different experiments within that study he did. Another one that he did was that he had drivers after the surprise SUA event was over so they calmed down and back to normal, he gave them a series of individual tasks where they knew the

SUA was coming.

And the one that is relevant to this question was he said, I want you to start from a stop. I want you to accelerate up to a constant speed, somewhere around 20 to 25 miles an hour, hold that steady and when I flip the switch for this SUA and the throttle opens up wide open, I want you to pump the brakes several times and stop the car as quickly as you can. They've already experienced it. They know it's coming. They're waiting for it to come. Three out of 39 men in that experiment could not stop the car. Eighteen out of 43 women could not stop the car. They knew it was coming, and they simply couldn't stop it.

Last piece of evidence I would use to support that opinion is my own personal experience. I ran myself, if you will, through the Cooper study. So I was a driver. Of course I knew the SUA event was coming, but I wanted to experience it. When I did this part of the study that I'm talking about of knowing it is coming, I got up to speed, I'm waiting for Dr. Cooper to flip the switch, he does, I pump the brakes. Then I start to stop that car as hard as I can. At first, I felt pretty good, the car is starting to slow down, this is promising, until the car down shifted. When the car down shifted it started to accelerate. I physically, 63-year-old male, five foot eight, 170 pounds, I physically could not override that engine and stop the car.

Q All right. A last area I want to cover with you, Dr. Gill, and that is obviously the ladies and gentlemen of the jury haven't heard from any other experts, especially Toyota experts in this case. But you have been studying this sudden unintended acceleration phenomenon, and there are some folks that have theories out there about pumping the brakes and things like that. You're familiar with those?

A Very much so.

Q And one of them is that people will not and do not pump the brakes. Are you familiar with that?

A I've seen that from a number of the experts on the other cases that I've been involved in, including this case. Yes, sir.

Q And why is it that you don't believe that's an accurate opinion or theory?

A I think there are two things that I would look at. First one is pretty simple. It is the five things that I talked about about why I believe that a foreseeable response to a driver experiencing an SUA is to pump the brakes. I'm not telling you every single driver does, but it is a foreseeable response, and it is a common response.

You will see drivers that pump what they believe to be the brake pedal, so that is piece number one. Piece number two is if you look at the research that these experts are citing the research doesn't match up with what they're trying to cite it for.

Q Can you explain that.

A What they're looking at is research that is appropriate and well done research of driver behavior to an emergency situation. For example, they will have a driver in a simulator or in a closed course like in the Cooper study. As they're going around the course, or in the simulator, suddenly a fake child on the closed course darts out in front of them, or suddenly an obstacle pops up in front of them.

Now, what is the driver's response most likely going to be? Hit the brakes and hit the brakes hard. Well, they look at studies like that and say, Oh, but the driver never pumped the brakes. Of course not. There is no motivation to pump the brakes. If it's not an SUA event, if you believe your brakes are working properly, if the car is stopping as hard as you expect it to be stopping, why in the world would you let off the brakes and push again?

To give you a simple analogy, if I took one of their studies and they have a rock, paper mache rock that rolls out on the road and suddenly the driver is faced with this, I want to find out whether or not in an emergency situation a driver honks their horn. And I look at that study and none of those drivers honk their horn. Would you conclude, therefore, in an SUA drivers don't honk their horn or a rock out in front of you? There would be no motivation to honk a horn at a rock, no motivation to pump your brakes if the car is stopping the way that you expect it to. So the studies don't address the question that they are using it for.

Q Let's move onto another theory that is out there. And that is people should know if they have antilock brakes you never pump the brakes. Are you familiar with that?

A Very much so.

Q What are your opinions as it relates to that theory?

A As an absolute rule, that is definitely not true. As a general rule of thumb, you're better off not to pump antilock brakes. Let me distinguish the difference. The purpose of a antilock brake is so no matter what the driving conditions are, perfectly dry roads, gravely roads, snow and ice, when you hit the brakes the way that you will stop the absolute quickest is to get that tire right on the verge of skidding but not skidding.

Once it locks up and starts to slide, the car doesn't stop as quickly as if it's not sliding. So the purpose of antilock brakes is to keep you right on the verge of slide and not slide. In other words, you don't leave a big tire mark on the roadway. So generally speaking, you're going to stop quicker if you don't pump antilock brakes. But if you perceive brake failure, are you worried about your brakes locking up? You're concern is stopping the car and the brakes aren't working. It goes back to what I talked to earlier. If you believe that you have brake failure, the proper thing to do is to try to pump your brakes to gain some kind of pressure. So whether you have antilock brakes or not, that's still a proper thing to do.

Q All right. And one last area that I want to cover with you. You know, I'm a football fan and I'm probably one of the world's worse at what they call Monday morning quarter backing. I go back through a game and say, they should have thrown to the other guy, he was open. And I think people have a tendency to do that sometimes in accidents. And there are some other ways I guess to stop a vehicle other than just pumping the brakes, aren't there?

A Well, there are. And your Monday morning quarterback example is a good one. That is not the starting point. If you are driving off an exit ramp and you go to slow down and you go to step on the brakes and it doesn't quite slow the way that you think, do you immediately jump to some other solution? No. People don't do that; that's problem number one with that theory.

Problem number two is back to that stimulus response paradigm. Before you get to that point of trying other solutions, you try what you know works, letting off the gas, stepping on the gas, stepping harder if you believe they are failed, pumping. Problem number three, it sounds good in theory, but there are other risk factors. In other words, why didn't you just turn the car off? Couple of things. If you turn the car off, guess what, you just loss your power steering.

Worse yet, imagine the hyper state of anxiety you are in as the car is speeding down the road and you can't stop it. Would it be possible when you turned it off that you turned it too far and accidently pulled the key out? You just pull a little bit, guess what happens? Not only do you lose power steering, you just locked your steering. You took a bad situation and made it really worse.

Other things that you hear is, Well, just slam it into park. Again, that's a good way to lose control of the vehicle. Grab the emergency brake. In this case, Toyota's expert say, No, if you grab the emergency brake you would have spun out of control. So there are down sides to these other solutions.

Q Well -- go ahead.

A And then the other thing is if you look at just human behavior and how do we respond in a panic situation, it is what is called hyper vigilance. There is a whole host of reasons why people aren't likely to get to those other solution paths. And the last thing that I would say is look at some of the classic, well documented SUA events. One in particular that sounds out to me is what is called the Saylor incident.

MR. BIBB: Objection, your Honor.

THE COURT: Counsel, please approach.

(The following bench conference was had outside the hearing of the jury:)

MR. ESDALE: Your Honor, what I'm offering this for, he is not -- this is clearly a pedal entrapment case. It was talked about with Mr. Lentz in Mr. Lentz's deposition. All he will use it for is the fact people have a tendency to Monday morning quarterback like I say. And here is a state trooper, a California state trooper that is in a long-term event and never put his car into neutral or anything. He is just using it as an example to say, look, you can't just blame people for taking these other maneuvers like turning off a car or putting it in neutral. All he will say is that it was a long-term event they were on the phone, stuff the jury already heard. They still never shifted the car in neutral.

MR. BIBB: He did does not mention Saylor in his report. It is not a basis for any of his opinions.

THE COURT: I will sustain the objection.

(Within hearing of the jury:)

Q (By Mr. Esdale) Dr. Gill, let me ask you this way: Are you aware of long-term sudden unintended acceleration events where, for instance, people are on the phone to 9-1-1 operators where all through that they never turn the car off or put the car in neutral or anything along those lines?

A Yes, sir. What I was going to talk about without mentioning specifics is --

THE COURT: No. That is the answer to the question right now.

Q (By Mr. Esdale) Again, in -- other than the case that you were going to talk about, are you familiar with other instances that you just described?

A Multiple other instances. Yes, sir.

Q Can you tell us the circumstances about how that, in a general sense, what happens in those situation?

A The other circumstances that I'm thinking about involved higher speed SUAs, in other words, they're on an interstate highway or state highway like 69 here in Oklahoma. The vehicles are traveling at highway speed, an SUA occurs. It goes on long enough that the driver and/or passenger has the wherewithal to realize they can't control the vehicle.

They call 9-1-1, and they ask for assistance. And through the course of a significant period of time, miles after miles, the conversations are going on trying to assist them. And in some of these cases, even then nobody says shift into neutral, shift into park, turn off the car, grab the emergency brake. Even the people that are not in the heat of the moment it doesn't come to them to try these other solutions.

MR. ESDALE: It is a good time to break for lunch, your Honor.

THE COURT: Yes. Ladies and gentlemen, it is 12:30. We're in recess until 1:30. During the break, do not discuss the case.

All rise while the jury exits.

(Whereupon, a short recess was had.)

THE COURT: Does plaintiff have any exhibits from Mr. McCort?

MR. ESDALE: Yes, ma'am. Mr. Jennings, I think these are without objection as we discussed yesterday. You're free to come oversee me on this. 5700 is his CV.

MR. JENNINGS: No objection.

THE COURT: Plaintiffs' 5700 is admitted into evidence.

MR. ESDALE: 5726.

MR. JENNINGS: No objection.

THE COURT: Court will admit Plaintiffs' 5726.

MR. ESDALE: 5727.

MR. JENNINGS: No objection.

THE COURT: 5727 is admitted into evidence.

MR. ESDALE: Photographs from the scene, Exhibits

6833 through 6893.

MR. JENNINGS: No objection.

THE COURT: Court will admit 6833 through 6893.

MR. ESDALE: Vehicle inspection photographs 6791 through 6832.

MR. JENNINGS: No objection.

THE COURT: Court will admit 6791 through 6832.

MR. ESDALE: Finally, more vehicle inspection photographs 6894 through 7128.

MR. JENNINGS: No objection.

THE COURT: Court will admit Plaintiffs' Exhibit No. 6894 through 7128. Mr. Jennings, did you have one also?

MR. JENNINGS: One. Defendants' Exhibit 1.

THE COURT: We love that. Defendant's Exhibit No. 1. Was that --

MR. JENNINGS: That was a picture of the seat belt.

THE COURT: Okay. And.

MR. JENNINGS: And I move the admission. That was Mr. Allen.

THE COURT: On the record this morning I wasn't certain if I had admitted that, so I've admitted Defendants' Exhibit No. 1. You didn't have one today?

MR. JENNINGS: No, ma'am.

(Conclusion of morning trial proceedings.)

STATE OF OKLAHOMA)
)
COUNTY OF OKLAHOMA)

C-E-R-T-I-F-I-C-A-T-E

I, Karen Twyford, Certified Shorthand Reporter, in and for the County of Oklahoma, State of Oklahoma, do hereby certify that the foregoing transcript is a true, correct, and complete transcript of my stenographic notes.

I further certify that I am not related to any of the parties herein, nor am I interested in any way in the outcome of these proceedings.

WITNESS my Hand this _____ day of ____________, 2013.

____
KAREN TWYFORD
CERTIFIED SHORTHAND REPORTER
CERTIFICATE NO. 01780